

**Volume I - Final
Phase III Remedial Investigation Report
Time Oil Northwest Terminal
Portland, Oregon**

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Prepared for

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EXECUTIVE SUMMARY

Beginning in the fall of 2001, Landau Associates conducted the third phase of a remedial investigation (RI) for Time Oil Co. (Time Oil) at its Northwest Terminal (Terminal) in Portland, Oregon. This third phase of the RI (referred to as the Phase III RI) followed Phases I and II of the RI and was conducted to complete the assessment of the nature and extent of contamination in soil and groundwater at the Terminal. The earlier phases addressed soil and groundwater within an area of the Terminal where a pentachlorophenol (PCP) mixing operation was formerly located and where waste oil was formerly stored (Phase II), and where a stockpile containing soil excavated from the former PCP mixing area was temporarily placed (Phase I). Investigations for the third phase focused on areas where petroleum products were stored and handled. This report comprehensively describes the nature and extent of soil and groundwater contamination throughout the Terminal, as defined by all three phases of the RI. Each RI phase has been conducted in accordance with the State of Oregon's Hazardous Substance Remedial Action Rules (OAR 340-122), with oversight by the Oregon Department of Environmental Quality (DEQ), under the provisions of the voluntary cleanup program (VCP) agreement between Time Oil and DEQ dated September 5, 1996. The information obtained in this Phase III RI will be used with information obtained during Phase II of the RI in a human health and ecological risk assessment and a subsequent feasibility study of potential remedial actions.

FACILITY DESCRIPTION

The Time Oil Terminal is a former bulk petroleum storage and transfer facility currently owned and operated by Time Oil Co. Time Oil ceased operations at the Terminal on October 31, 2001. From 1943 to 2001, the Terminal was operated by Time Oil as the Northwest Terminal petroleum products facility. Since operations began, the Terminal was used for the receipt, storage, and distribution of petroleum and petroleum-related products. Historically, Time Oil leased tank space to Crosby & Overton for storage of waste oils, and the Koppers Company leased tanks and property at the Terminal for the formulation of PCP-containing wood treatment products. Within the Terminal, the specific areas of focus for the Phase III RI include:

- **Northwest Terminal tank farm areas** where various petroleum products were stored and handled. Bulk product Terminal areas are located in the western and southern portions of the facility adjacent to the Willamette River. The tank farm areas include 21 aboveground storage tanks (ASTs) in the Main Terminal Tank Farm area and 10 ASTs in the Bell Terminal Tank Farm area. The storage tanks range from 3,000 to 80,000 barrels in size. Currently, all tanks are empty except for tank 16804 in the Main Terminal Tank Farm area, which temporarily stores water from the groundwater interim action wells RW-2 and HRW-1 and water collected from the groundwater intercept system in the east-west trending storm drain at SDM-1 prior to treatment by the onsite wastewater system. At the Bell Terminal Tank

Farm area, a strip of land approximately 80 ft wide along the entire western property boundary and outside of the tank farm wall was apparently used by owners/operators of the adjacent property to the west for approximately 25 years, ending in 2000, based on historical aerial photographs.

- **Butane and aviation gasoline storage areas** located to the southeast of the Terminal office. These areas include two ASTs formerly used for storage of aviation gasoline and one AST formerly used for butane storage. Currently, all tanks are empty.
- **Former petroleum transfer and receipt facilities** include above- and below-ground piping; product receipt facilities via rail, truck, and vessel; and product distribution facilities via truck and rail (loading racks), and via marine vessels (a 380-ft dock in the Willamette River). A former rack for loading trucks is located just west of the Terminal office. A former loading rack for rail transfer and receipt is located at the terminus of the rail spur to the east of the Terminal office. A former loading rack for the Bell Terminal Tank Farm area is located at the eastern side of the Bell Terminal Tank Farm area. Historically in these areas, product was transferred from the railcar, truck, or vessel to the above-ground tanks through pipelines located near each of the receipt/distribution locations. None of the equipment in these areas is currently in use.
- **Wastewater treatment system** located in the northern portion of the facility where groundwater recovered from the two groundwater interim action recovery wells, the groundwater intercept system in the storm drain, and investigation-derived groundwater from purging of monitoring wells during quarterly sampling events is treated before discharge to the City of Portland's sanitary sewer.
- **Entrance, former office, warehouses, and equipment maintenance area** located in the northern portion of the facility.
- **Undeveloped area of the Terminal** located in the eastern portion of the Terminal. This area is a currently and historically undeveloped area. Only the western portion of this area was included in the Phase III RI. The remaining portion of this area (referred to as the East Property) was studied outside of the RI and has been granted a conditional No-Further-Action (NFA) determination by DEQ.

Other features located within the Terminal that were not the focus of the Phase III RI, but have been included in earlier phases of the RI, include:

- **Former PCP mixing area** where specialty wood treating products containing PCP in various formulations (typically with petroleum-based carriers) were blended and stored for offsite shipment. The former PCP mixing area is located in the approximate center of the Terminal, and includes the former PCP warehouse and the area south of the warehouse (formerly occupied by various mixing and storage tanks, which were removed by 1982). During a soil removal action in fall 2002, 6,400 yd³ of PCP-impacted soil were excavated from these areas for offsite incineration and disposal. The Phase II RI report describing this area was submitted to DEQ on February 9, 2001. The soil removal actions completion report was submitted to DEQ on November 10, 2003.
- **Former Crosby & Overton tank area** located directly south of the former PCP mixing area where waste oils were previously stored in two ASTs. The tanks have since been removed from this area. During a soil removal action in fall 2002 (in conjunction with the former PCP

mixing area), 819 tons of polychlorinated biphenyl (PCB) and carcinogenic polycyclic aromatic hydrocarbon (cPAH)-impacted soil was excavated from this area for offsite thermal treatment and disposal. The Phase II RI report describing this area was submitted to DEQ on February 9, 2001. The soil removal actions completion report was submitted to DEQ on November 10, 2003.

- **Former soil stockpile area** where approximately 3,600 yd³ of soil that was excavated from the former PCP mixing area in 1989 or was transferred from the East Property during interim removal actions in 1996-1997 was temporarily located. The stockpile was located southwest of the former PCP mixing area and north of an inactive soil treatment area. The former stockpile was removed for incineration and disposal offsite during Phase I/II soil removal actions conducted in fall 2002. The Phase I RI report describing the former soil stockpile area was submitted to DEQ on April 25, 1997. The soil removal actions completion report, including removal of the soil stockpile, was submitted to DEQ on November 10, 2003.

SCOPE OF THE PHASE III RI

The purpose of the Phase III RI was to characterize the nature and extent of contamination and complete the conceptual site model for the Terminal and to obtain information adequate for assessing risks to human health and the environment. For this purpose, the scope of the Phase III RI included: collecting soil and groundwater samples for chemical analysis within those areas (referred to as the Phase III study area) of the Terminal not previously investigated during Phase I and Phase II of the RI or during East Property investigations; collecting soil samples to better define the hydrogeologic units for the Terminal; and groundwater monitoring to determine groundwater flow within each hydrogeologic unit throughout the Terminal area. This included collecting more than 250 soil samples and groundwater samples from a maximum of 82 wells for chemical analyses on a quarterly basis; monitoring groundwater levels at the 82 monitoring well locations; and logging subsurface soil conditions at more than 160 soil boring locations.

PHASE III RI ACTIVITIES

The Phase III RI was conducted in three stages: a preliminary evaluation, an interim subsurface investigation, and a final soil and groundwater investigation:

- A preliminary evaluation was conducted in the fall of 2001 to evaluate the general distribution of hazardous substances in groundwater and soil within the Phase III study area and to collect geologic, hydrogeologic, and chemical data in advance of a full-scale Phase III RI to focus future sampling efforts. This evaluation included collecting composite soil samples within 27 grids and 17 biased areas using direct-push methods. Also, during the implementation of the preliminary investigation, Schnitzer Investment Corporation (Schnitzer) collected soil and groundwater samples at nine direct-push borings located on the Time Oil property just west of the Bell Terminal Tank Farm area. During the sampling, Landau Associates collected split soil and groundwater samples at each boring for Time Oil.

- An interim subsurface investigation was conducted in July 2002 to better understand the subsurface geology and hydrogeology prior to selecting Phase III RI permanent monitoring well locations. The investigation included: 1) collecting lithological information at 27 locations within the Phase III study area using the cone penetrometer technique (CPT), 2) collecting soil samples at 10 locations in the Bell Terminal Tank Farm area using direct-push sampling techniques, and collecting groundwater samples at these locations from temporary well points, and 3) collecting five discrete soil samples in certain areas where soil composite samples were collected during the preliminary evaluation and additional information was needed.
- Final stage soil and groundwater investigations were conducted within the Phase III study area from August through October 2003. For these investigations, soil samples were collected from 27 soil borings and 15 hand-dug holes. Twelve monitoring wells (four shallow and eight deep) were installed in the Main Terminal Tank Farm area and 10 monitoring wells (seven shallow and three deep) were installed in the Bell Terminal Tank Farm area.
- A supplemental investigation was conducted within the Phase III study area from October through November 2004. Twelve additional monitoring wells were installed: one upper zone and two lower zone wells within the Main Terminal Tank Farm area, four lower zone wells on the shoreline of the Willamette River, four upper zone wells within the Bell Terminal Tank Farm area, and one lower zone well to replace the well that was damaged during implementation of the *in situ* chemical oxidation technique for remediation of shallow soil and groundwater associated with the former PCP mixing area.

PHASE III RI RESULTS

The results of the Phase III RI investigations were used to determine the locality of facility, the nature and extent of contamination at the Terminal, and the fate and transport processes of these contaminants, as described below.

Locality of Facility

Locality of the facility is defined by DEQ rule as “any point where a human or an ecological receptor contacts, or is reasonably likely to come into contact with, facility-related hazardous substances.” OAR 340-122-115(34). Based on the soil and groundwater data collected to date, the locality of the facility for the Terminal has been defined to include all of the Phase II and Phase III study areas and the shoreline of the Willamette River west of the Main Terminal Tank Farm area extending to the locations of the shoreline wells. Based on the shoreline groundwater data collected in November 2004, February 2005, and June 2005, facility-related groundwater contaminants are currently reaching the river at concentrations below applicable screening level values. These data indicate that, even though there is a physical groundwater transport pathway from the upland areas of the terminal to the river, there is not a complete exposure pathway via groundwater at the Time Oil

facility to the Willamette River. Therefore, groundwater discharge to the Willamette River is not a current or future beneficial use of the groundwater and the Willamette River is not within the locality of the Time Oil facility. Groundwater concentrations in the shoreline wells will be confirmed through a full year of groundwater monitoring. Also, Time Oil is planning to conduct a source control evaluation to determine whether there is a potential for constituents currently observed in wells within the Main Tank Farm Area to migrate to the river. Historical discharges to the river, including discharges via the storm drain will be addressed during the RI/FS for the Portland Harbor Superfund Project. Low level detections of PCP have been observed intermittently within the lower zone at the southern property boundary of the Terminal. The current groundwater interim action has effectively reversed downgradient groundwater flow near this area; however, because the predominant groundwater flow direction from this area is to the west/southwest toward the river (Bridgewater Group 1998, 2001) and there is potential for migration of these concentrations to the river outside the influence of the interim action, a small portion of the Former Premier Edible Oils (PEO) property south of the property boundary near the river is included in the locality of facility. Other properties downgradient of the Terminal include the former PEO property located west of the Bell Terminal Tank Farm area. The property west of the Bell Terminal Tank Farm area has not been included in the locality of the facility because, although contaminants have been detected in soil and groundwater along the western property boundary, the data indicate that there appears to be a separate source for contamination in this area and also in the area on the former PEO property where product has been observed in well MW-4 on a consistent basis between 2001 and 2003 (the most recent data available). No product has been observed in soil or groundwater within the Bell Terminal Tank Farm area. Even though it is likely that the plume originating from the central portion of the Bell Terminal commingles with the plume originating near the western property boundary, and that both of these plumes commingle with other contamination originating on the former PEO property where significant petroleum releases are known to have occurred, such as in the area where the former diesel above-ground storage tanks (ASTs) were located near well MW-4, it is unlikely that the elevated concentrations observed near the western property boundary or on the former PEO property originate from the Bell Terminal. This conclusion is based on the significant increase in both soil and groundwater concentrations for petroleum constituents across the western property boundary and on the former PEO property. Therefore, the locality of facility boundary was extended to the western property boundary. Data from the adjacent property is not sufficient to identify the point at which any plume moving from the Bell Terminal terminates within plumes originating at the PEO property in order to define the locality of the facility in this area with certainty.

Data collected during the fourth quarter 2004 event from the new wells located at the north property boundary of the Main Terminal Tank Farm area, indicate that low levels of contaminants were detected in groundwater in this area. During June 2005 and November 2005, Time Oil attempted to sample two existing wells on the Port of Portland property located within 300 ft of the Terminal's north property boundary. Both wells were dry. Sampling of these wells will be attempted again during the wet season, in February 2006. If sampling of these wells is again unsuccessful, a recommendation will be provided to DEQ on a methodology for definition of the locality of facility in this area. Until sample results are collected and evaluated from this area, the locality of facility boundary in this area is approximate, but assumed to extend to the north property boundary.

Nature and Extent of Contamination: Soil

The nature and extent of contamination in soil for the Terminal was evaluated by operational areas: the Main Terminal and Bell Terminal Tank Farm areas, the loading rack/entrance area of the Main Terminal, the eastern portion of the Phase III study area, the asphalt-paved road area, and the Phase II study area. These areas are shown on Figure 1-2. Preliminary screening levels, based on various published federal and state criteria and site-specific background concentrations, were used to compare to the observed soil concentrations. The Phase III RI data evaluation indicated the following:

- Petroleum hydrocarbons and constituents commonly associated with petroleum products [i.e., PAHs and volatile organic compounds (VOCs)] were detected in soil in the unsaturated zone within the Main Terminal and Bell Terminal Tank Farm areas. The highest concentrations and the most exceedances of preliminary soil screening levels were detected at the capillary fringe within each tank farm area.
- The presence of non-aqueous phase liquid (NAPL) was observed in soil during drilling at well LW-27S located in the central portion of the Main Terminal Tank Farm area at a depth of 22.5 ft below ground surface (BGS). Slight to heavy sheens were observed on subsurface soil samples collected at several locations within the Main Terminal Tank Farm area and the Bell Terminal Tank Farm area. These sheens were observed in soil at depths ranging between 3.5 to 34 ft BGS in the Main Terminal Tank Farm area and at depths ranging from 12.5 to 19.5 ft BGS in the Bell Terminal Tank Farm area.
- Along the western portion of the Main Terminal Tank Farm area, diesel-range and motor oil-range petroleum hydrocarbons were detected in the upper 1.5 ft of soil at concentrations up to 438 mg/kg and 308 mg/kg, respectively. Within the capillary fringe, diesel-range and gasoline-range petroleum hydrocarbons were detected in the soil at two locations: LW-24D and LW-35D located near the top of the river bank. The maximum gasoline-range and diesel-range petroleum hydrocarbons (12.7 mg/kg and 44.3 mg/kg, respectively) at this depth occurred at LW-35D located in the northwest corner of the Main Terminal. Concentrations of PAHs exceeding the preliminary screening levels were also reported for soil collected from the capillary fringe depth interval at three locations along the western boundary of the Main Terminal Tank Farm area, including locations LW-24D, LW-25D, and LW-35D.

- In the Bell Terminal Tank Farm area, total petroleum hydrocarbon-contaminated soil was found within two areas: along the western property boundary where, based on historical aerial photographs, owners/operators of the adjacent property used the property until approximately 2000, and in the central portion of the tank farm. The highest concentrations of contaminants in soil occur along the western property boundary. Diesel-range and gasoline-range petroleum hydrocarbons were found at the capillary fringe in this area at concentrations of 15,100 mg/kg and 8,750 mg/kg, respectively. Within the central portion of the Bell Terminal Tank Farm area, gasoline- and diesel-range petroleum hydrocarbon concentrations present in soil appear to have originated from different sources than those along the western property boundary because of the decreases in concentrations between the two areas. The TPH concentrations within the central portion of the tank farm are likely a result of minor, incidental releases related to operations within the Bell Terminal Tank Farm area. The source of TPH concentrations outside the operational area of the Bell Terminal Tank Farm near the western property boundary is unknown.
- In the loading rack/entrance area of the Main Terminal Tank Farm area, zinc and gasoline-range petroleum hydrocarbons are detected at concentrations exceeding preliminary screening levels. Elevated concentrations of gasoline-range petroleum hydrocarbons are associated with a composite sample collected at the capillary fringe in an area (biased area B3) where trucks were formerly loaded.
- PAHs and metals were detected in the soil in the eastern portion of the Phase III study area. Concentrations exceeding preliminary screening levels are most frequently found at the 0 to 0.5-ft depth interval. These concentrations appear to be associated with historic road oiling for dust suppression in this area. Diesel-range petroleum hydrocarbons were also detected in the surface soil, but not at concentrations exceeding the preliminary screening level.
- Within the asphalt-paved road area, TPH, PAHs, and metals were detected in the surface soil. At depths greater than 0.5 ft BGS, only metals were found in soil in this area. Contaminants found in the surface soil likely result from the presence of these constituents in the roadbase material of the asphalt road.
- Within the Phase II study area, PCP concentrations ranging from nondetect to 180 mg/kg potentially remain in soil at depths at and greater than about 13 ft BGS. This soil was not excavated during the removal action performed in the former PCP mixing area due to limitations in excavating soil below the water table and the plan to use *in situ* chemical oxidation (ISCO) to remediate soil and groundwater at this depth. Residual levels of PCP will be determined following completion of the full scale ISCO injection events. Other constituents associated with the PCP-formulating operations (diesel-range, motor oil-range, and gasoline-range TPH, PAHs, VOCs, and metals) are present in the surface soil and at depths at or deeper than the capillary fringe. Concentrations of several of the constituents exceed preliminary screening levels.

Nature and Extent of Contamination: Groundwater

The nature and extent of contamination in groundwater was evaluated by the same operational areas. Preliminary screening levels, based on various published federal and state criteria, were used for comparison to the observed groundwater concentrations. A summary of the Phase III groundwater results follows:

Main Terminal Tank Farm Area

- Diesel-range and gasoline-range petroleum hydrocarbons are present throughout the upper zone groundwater in the Main Terminal Tank Farm area at concentrations ranging from nondetect to 24 mg/L for the October 2003 event and ranging from nondetect to 6.5 mg/L for the November 2004 sampling event. Constituents typically associated with diesel-range and gasoline-range petroleum hydrocarbons (i.e., PAHs and VOCs) are also present in the upper zone groundwater in the Main Terminal Tank Farm area, but these plumes are not as widespread as the TPH plumes. Metals were detected in the upper zone groundwater throughout the Main Terminal Tank Farm area at concentrations typically less than site-specific background concentrations.
- The gasoline-range petroleum hydrocarbon and VOC plumes present in upper zone groundwater in the Main Terminal Tank Farm area extend into the western portion of the loading rack/entrance area.
- Light non-aqueous phase liquid (LNAPL) has been previously documented in the upper zone groundwater in the Main Terminal Tank Farm area at monitoring wells N, P, Q, LW-21S, LW-27S and direct-push point GW8-1. The thickness of LNAPL present at these locations varies over time and between locations. The thicknesses range from 0.01 to 1.2 ft.
- Diesel-range and gasoline-range petroleum hydrocarbons, PAHs, VOCs, and metals are present at concentrations exceeding preliminary screening levels in the lower zone groundwater along the western portion of the Main Terminal Tank Farm area where the confining unit is discontinuous or not present and the upper and lower groundwater zones converge; however, concentrations are typically significantly less than those detected in the upper zone groundwater in these areas. Within the western portion of the Main Terminal Tank Farm area, where the confining unit is present, fewer occurrences of contaminants in the lower zone groundwater are observed.
- Concentrations of diesel- and gasoline-range TPH, benzene, and ethylbenzene in the samples from the upper and lower zone wells within the Main Terminal Tank Farm area generally decreased or did not change significantly over time.
- Concentrations of diesel-range TPH concentrations in the lower zone within the Main Terminal Tank Farm area tend to be significantly greater than gasoline-range TPH concentrations at the same locations over time, but less overall than the upper zone concentrations for these constituents. TPH concentrations in groundwater from lower zone wells located beyond the extent of the confining unit in the Main Terminal Tank Farm area tend to be greater than from wells farther to the east where the confining unit is present. This is likely the result of upper zone groundwater with higher TPH concentrations mixing with lower zone groundwater downgradient of the confining unit boundary. Gasoline-range concentrations for the lower zone wells in the Main Terminal Tank Farm area showed similar overall trends to the diesel-range concentrations.

Bell Terminal Tank Farm Area

- Groundwater data collected within the Bell Terminal Tank Farm area and on the former PEO property suggest the presence of three commingled petroleum hydrocarbon plumes within this area: 1) one originating in the central portion of the Bell Terminal Tank Farm

area near the east-west trending pipeline, 2) one originating along the western property boundary outside the walls of the tank farm, and 3) one originating on the eastern portion of the former PEO property where significant petroleum releases are known to have occurred, such as in the area where the former diesel ASTs were located. Even though it is likely that the plume originating from the central portion of the Bell Terminal commingles with the plume originating near the western property boundary, and that both of these plumes commingle with other contamination originating on the former PEO property in the area where the former diesel ASTs were located, it is unlikely that the elevated concentrations observed near the western property boundary or on the former PEO property originate from the Bell Terminal tank farm operations. This conclusion is based on the significant increase in both soil and groundwater concentrations for petroleum constituents across the western property boundary and on the former PEO property. Also, product has consistently been observed with thicknesses up to about 6 ft in wells on the eastern portion of the former PEO property (well MW-4) between 2001 and 2003, but no product has ever been observed within the Bell Terminal Tank Farm area. This contaminant distribution supports the presence of different sources than in the Bell Terminal Tank Farm area.

- The maximum concentration of petroleum hydrocarbons in upper zone groundwater in the Bell Terminal Tank Farm area (796 mg/L for diesel-range hydrocarbons) was found near the western property boundary based on a direct-push sample collected in 2001. Constituents associated with diesel-range and gasoline-range petroleum hydrocarbons (i.e., PAHs and VOCs) are also present in the upper zone groundwater in the Bell Terminal Tank Farm area; however, the areas of impacted groundwater for these constituents appear to be smaller than the areas of groundwater impacted by petroleum hydrocarbons. Petroleum hydrocarbon concentrations increase across the western property boundary and on the former PEO property to maximum concentrations of 6.8 mg/L for diesel-range hydrocarbons and 38.7 mg/L for gasoline-range hydrocarbons at direct push location B-60.
- No LNAPL was observed on upper zone groundwater in the Bell Terminal Tank Farm area. LNAPL has consistently been observed between 2001 and 2003 (only data available) in well MW-4 located on the former PEO property near the locations of the former diesel ASTs.
- Except for diesel-range petroleum hydrocarbons and metals, contaminants are not present in the lower zone groundwater in the Bell Terminal Tank Farm area. A low level concentration of diesel-range petroleum hydrocarbons (0.35 mg/L) was observed at well LW-32D. Metals (chromium, copper, nickel, and zinc) were observed at three lower zone monitoring well locations at concentrations ranging from 0.004 to 0.01 mg/L.
- Lower zone groundwater concentrations in the Bell Terminal Tank Farm area for diesel- and gasoline-range TPH, benzene, and ethylbenzene are much less than the upper zone concentrations. Diesel- and gasoline-range TPH concentrations are much less in upper zone groundwater in the Bell Terminal Tank Farm area than in the Main Terminal Tank Farm area.
- Concentrations of petroleum constituents in the lower zone increase significantly to the east of the extent of the confining unit boundary on the former PEO property. Based on the most recent data available (1996 and 1998 for TPH, and January 2003 for BTEX), elevated diesel-range hydrocarbon concentrations were observed with a maximum

concentration of 35 mg/L at direct-push location G. Gasoline-range hydrocarbon and ethylbenzene concentrations exceeding the preliminary screening levels were also observed in this area with maximum concentrations of 44.5 mg/L at direct push location B-9 and 1,500 mg/L at well MW-5, respectively.

Eastern Portion of Phase III Study Area

- Although petroleum hydrocarbons were not analyzed for in the upper zone groundwater in the eastern portion of the Phase III study area, no VOCs or PAHs were detected in the upper zone groundwater.

Phase II Study Area

- The only significant plume of contamination in the upper zone groundwater in the Phase II study area is PCP. Based on the fourth quarter 2003 groundwater data, PCP concentrations in this plume range from 0.61 µg/L to 2,100 µg/L and extend approximately 450 ft downgradient from the PCP mixing area. In November 2004, the overall size of the PCP plume had diminished and concentrations within the plume had decreased significantly with the previous maximum concentration decreasing to 624 µg/L. These decreases in PCP concentrations appear to result from a large-scale soil removal action in 2002 as well as two full-scale ISCO injection events within the PCP plume area. Historical PCP concentrations within the upper zone have been as high as 23,000 µg/L at well LW-11S.
- The Phase III RI results also indicate that separate plumes of diesel-range and gasoline-range petroleum hydrocarbons and VOCs are observed in the upper zone groundwater within and downgradient of the Phase II study area. These concentrations do not appear to originate in the tank farm areas and are likely related to the presence of PCP carrier oils (e.g., mineral spirits) as light non-aqueous phase liquid (LNAPL) and to the partitioning of these constituents into groundwater.
- Occasional observations of LNAPL have also been recorded for upper zone groundwater monitoring wells within the Phase II study area. These wells include OX-1S, OX-2S, OX-3S, LW-8S, and LW-11S and piezometer PZ-2. LNAPL thicknesses at these locations since the soil removal action have ranged from 0.04 to 0.37 ft. LNAPL occurring in this area appears to be related to activities performed in the former PCP mixing area and not related to LNAPL observed in the Main Terminal Tank Farm area. LNAPL presence is also related to seasonal groundwater fluctuations.
- PCP is detected in the lower zone groundwater within the Phase II study area, the southern portion of the Main Terminal Tank Farm area, and the western portion of the asphalt-paved road area at concentrations less than preliminary screening levels. This distribution of PCP concentrations in lower zone groundwater in this area reflects downgradient movement from a historically high PCP concentration area and the influence of recovery well RW-2. Detections of diesel-range petroleum hydrocarbons are observed in the lower zone groundwater in these areas at concentrations up to 3.1 mg/L.

Asphalt-Paved Road Area

- No contaminants were detected in upper zone groundwater within the asphalt-paved road area.

Loading Rack/Entrance Area

- No lower zone groundwater monitoring wells exist in the loading rack/entrance area of the Main Terminal.

Shoreline Wells

- Groundwater results for the Willamette River shoreline wells indicate that, with the exception of chromium in wells LW-37D, LW-38D, and LW-39D and copper in well LW-37D, no concentrations exceeded the preliminary screening levels during the November 2004 event. Data for the first quarter 2005 (provided in its entirety in a separate deliverable) indicate that concentrations for all constituents are less than the preliminary screening levels in the shoreline wells. These data indicate that facility-related groundwater contaminants are currently reaching the river at concentrations below applicable screening level values. These groundwater concentrations will be confirmed through a full year of groundwater monitoring.

Site-Wide Observations

- Metals concentrations in the lower zone are typically greater than in the upper zone and may be the result of reducing conditions in the lower zone enhanced by the presence of petroleum hydrocarbons.
- Except for a slight sheen and a slight to moderate mineral spirits-like odor during the first sampling of well B2 in August 1993, no NAPL or odors have been reported for the lower zone groundwater at the Terminal.
- Fluctuations in groundwater elevations in the upper zone reflect typical seasonal variability with seasonal lows during the fall months (October-November) and seasonal highs during the winter and early spring months (January-March).
- Comparison of the diesel- and gasoline-range TPH, benzene, and ethylbenzene concentrations with groundwater elevations indicate that groundwater concentrations in upper zone wells are likely influenced by seasonal fluctuations in groundwater levels. Lower zone groundwater elevations correlate with river stage fluctuations; however, any trend in groundwater concentrations in response to fluctuations in groundwater level or river stage is not apparent from the available data.

Contaminant Fate and Transport: Soil

Contamination of soil throughout the Terminal appears to be a result of the release of hazardous substances directly onto the soil during operation of the Terminal. Within the former PCP mixing area, releases occurred during PCP formulation activities. Within the former Crosby & Overton area, releases

occurred during lease operations and tank closure. In the Main Terminal Tank Farm area, releases occurred due to spills and possibly leaking along conveyance pipelines and/or with activities associated with bulk fuel storage. In the Bell Terminal Tank Farm area, although no releases have been documented, it appears releases may have occurred in the central portion of the Bell Terminal Tank Farm area near the east-west trending conveyance pipeline due to incidental spills, along the western property boundary outside the walls of the tank farm in an area that appears to have been used by operators of the adjacent property for storage, and on the eastern portion of the former PEO property (including the former locations of diesel ASTs). Within the eastern portion of the Phase III study area and the asphalt-paved road areas, the releases appear to be associated with current and/or historic road material. The elevated concentrations of contaminants in soil at the capillary fringe depth interval throughout the tank farm areas and in the Phase II area indicate that releases of hazardous substances to the ground surface were historical and that the substances released have had sufficient time to migrate downward and spread laterally along the capillary fringe. The partitioning of constituents in contaminated soil or LNAPL to groundwater has resulted in dissolved phase contamination. Stockpiled soil in the Phase I study area and PCP-impacted soil in the Phase II study area at the ground surface to the depth of the water table (approximately 13 ft BGS) has been removed and incinerated and disposed offsite. Concentrations of contaminants remaining in soil in this area are at levels that were calculated to be protective for migration to groundwater that ultimately discharges to surface water.

Contaminant Fate and Transport: Groundwater

The presence of the same contaminants found in groundwater as in soil throughout the tank farm areas and the former PCP mixing area indicates that contaminants have partitioned from the soil and/or NAPL into the groundwater. Petroleum hydrocarbon plumes and PCP plumes found in the upper zone of the tank farm areas and the former PCP mixing area, respectively, appear to have migrated in the downgradient direction (west or southwest). For PCP, historical and recent concentrations of PCP in groundwater were used to evaluate potential contaminant migration pathways between the historical and recent monitoring periods. Currently, migration pathways for PCP are being controlled through the groundwater interim action (e.g. groundwater recovery) and the ISCO injections in the PCP plume areas. Potential historical contaminant migration to the Willamette River is being addressed during the RI/FS for the Portland Harbor Superfund Project. Historical groundwater quality data are not available for the tank farm areas.

In the Main Terminal Tank Farm area, the presence of contaminants in the lower zone groundwater in the western portion of the tank farm where the confining unit is discontinuous or absent, and the lesser presence of these contaminants in the lower zone groundwater in the eastern portion of the

tank farm where the confining unit is present, indicates that contaminants in the upper zone groundwater are migrating westward (downgradient) and mixing with the lower zone groundwater. The downgradient extent of the diesel-range and gasoline-range hydrocarbon plumes originating from the Bell Terminal Tank Farm area suggests that lateral movement of the contaminants is slow, which may be due to the low horizontal hydraulic gradient in this area, partitioning of these constituents from the dissolved phase onto organic matter, or attenuation processes (e.g., biodegradation and/or volatilization).

Vertical migration of contaminants from the upper zone groundwater to the lower zone groundwater seems to occur only in locations where the confining unit is discontinuous and/or absent (e.g., the western portion of the Main Terminal Tank Farm area, within and downgradient of the former PCP mixing area, and the western portion of the former PEO property to the west of the Bell Terminal tank farm area). This suggests that the silt layer over much of the western portion of the Main Terminal Tank Farm area and the Bell Terminal Tank Farm area is acting as an impermeable geologic/hydrogeologic boundary. Because the confining unit boundary on the former PEO property is estimated within the likely source area where the diesel ASTs were located on the eastern portion of the PEO property, the elevated groundwater concentrations in this area could reflect groundwater contamination resulting from direct releases to soil where the confining unit is not present or downgradient flow of contaminated groundwater from the upper zone across the confining unit boundary. However, in the latter case, concentrations would typically decrease instead of increase in the downgradient direction.

The storm drain located in the southern half of the Terminal and the backfill associated with the storm drain appear to affect groundwater flow and contaminant transport in the upper groundwater zone. The presence of the storm drain may partly explain the southerly components of upper zone groundwater flow in the Terminal area as groundwater flows toward the zone of higher hydraulic conductivity. The storm drain does not appear to fully penetrate the confining unit (where present) and, thus, is not thought to provide a vertical pathway for groundwater flow and contaminant transport to deeper aquifers, except beyond the extent of the confining unit. Groundwater samples collected from manholes in the storm drain and at the storm drain outfall in the river indicate that the storm drain has, in the past, acted as a preferential pathway for upper zone groundwater to the river. The groundwater intercept system was installed to eliminate the potential for upper zone groundwater to migrate through the storm drain to the river. The influence of the storm drain on groundwater quality will continue to be evaluated as part of the groundwater interim action. Additionally, implementation of full-scale *in situ* chemical oxidation (ISCO) technique for shallow groundwater and soil in and downgradient of the former PCP mixing area will continue as an interim remedial action to address migration of PCP contamination in groundwater from this area. The results from the July 2004 and January 2005 ISCO injections indicate that PCP

concentrations have been significantly reduced within the Phase II area and the extent of the PCP plume in the upper zone has been diminished.

The most critical potential exposure pathway at the Terminal is migration of contaminants via groundwater to surface water. However, as indicated by the analytical results for the groundwater samples collected from the Willamette River shoreline wells in November 2004, February 2005, and June 2005, facility-related groundwater contaminants are not currently reaching the river at concentrations above applicable screening level values. During the November 2004 event, only chromium was detected in shoreline wells LW-38D and LW-39D at concentrations exceeding the preliminary screening level, and only chromium and copper were detected in shoreline well LW-37D at a concentration exceeding the preliminary screening level. No constituent was detected at a concentration exceeding the preliminary screening levels in the shoreline wells during the February and June 2005 events. Therefore, even though there is a physical groundwater transport pathway from the upland areas of the terminal to the river, the data indicate that there is not a complete exposure pathway for migration of facility-related contaminants via groundwater to potential receptors in the Willamette River at concentrations that exceed applicable screening levels. Analytical results from future groundwater samples collected at the shoreline wells will be used to monitor the concentrations of groundwater contaminants that discharge to the Willamette River.

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1.0 INTRODUCTION

This report presents the results of the Phase III remedial investigation (Phase III RI) conducted at the Time Oil Northwest Terminal (Terminal) in Portland, Oregon (Figure 1-1). The Phase III RI was implemented in accordance with the State of Oregon's Hazardous Substance Remedial Action Rules (OAR 340-122), under the oversight of the Oregon Department of Environmental Quality (DEQ) under the voluntary cleanup program (VCP) agreement between Time Oil and DEQ, dated September 9, 1996 (DEQ No. WMCVC-NWR-96-07; DEQ 1996). The Phase III RI was conducted in accordance with the Phase III remedial investigation (RI) work plan, dated June 18, 2001 (Phase III RI work plan, Landau Associates 2001a).

The data collected for the Phase III RI focuses on the tank farm areas and other areas of the Terminal not covered by previous investigations; however, this report provides comprehensive documentation of the historical and current nature and extent of contamination at the Terminal using data from the Phase II RI and other relevant investigations to complete the RI portion of this project. Hot spots of contamination for the Terminal will be identified, in accordance with OAR 340-122-080, in conjunction with the evaluations for the human health and ecological risk assessments following selection of acceptable risk levels. The data presented herein are adequate and of sufficient quality to perform the human health and ecological risk assessments for the Terminal.

1.1 SCOPE AND OBJECTIVES

As described in the Phase III RI work plan (Landau Associates 2001a), the overall objective of the Phase III RI at the Terminal was to collect sufficient data from those areas of the Terminal for which no extensive investigations had previously been performed (i.e., the Phase III Study Area), such that, when evaluated in conjunction with previous site investigation data from other portions of the Terminal, the nature and extent of contamination within the Terminal boundaries could be determined, and the potential risks to human health and the environment could be assessed. To achieve these objectives, more than 250 soil samples and groundwater samples from a maximum of 82 wells were collected for chemical analyses on a quarterly basis. Also, groundwater levels were monitored quarterly at the monitoring well locations and subsurface soil conditions were logged at over 160 soil boring locations.

The Phase III study area, shown on Figure 1-2, was divided into the following subareas:

- Main Terminal Tank Farm area
- Bell Terminal Tank Farm area
- Historical loading racks for the tank farms/terminal entrance

- The eastern portion of the Phase III study area
- Asphalt Road area.

The extent of the Phases I/II study areas is also shown on Figure 2-1. The Phase I study area included the former soil stockpile that has since been removed and treated and disposed offsite. The Phase II study area encompasses the area where wood-treatment formulation activities were formerly located, including the former PCP mixing area and warehouse. These areas are described further in Section 2.1.

The objectives of the Phase III RI were to:

- Identify which hazardous substances, if any, had been released to the Phase III study area.
- Estimate the nature and extent of any soil and groundwater contamination identified within the Phase III study area.
- Obtain the hydrogeologic information needed to characterize the hydrogeologic system within the Phase III study area and to refine the hydrogeological conceptual site model.
- Obtain additional information needed to complete the conceptual site model, evaluate risk to human health and the environment, and conduct evaluations for a remedial action, if necessary. The conceptual model identifies the direction and migration of hazardous substances and identifies potential migration pathways and receptors based on current and reasonably likely future land and beneficial water use.

The Phase III RI did not include an investigation of Willamette River sediments. Collection of sediment samples at locations in the river adjacent to the Terminal are currently being collected as part of the RI/FS for the Portland Harbor Superfund Project.

1.2 REPORT ORGANIZATION

This report consists of two volumes. Volume I includes the main text, figures, and tables. Volume II includes the report appendices.

The remainder of Volume I is organized into the following sections:

- **Section 2.0 Background Information.** This section provides a description of the facility and its history, previous investigations conducted at the Terminal, and the regulatory framework of the RI process.
- **Section 3.0 Physical Setting.** This section provides a description of the physical setting of the Terminal, including the topography, regional geology and hydrogeology, surface water features, and climate and meteorology.
- **Section 4.0 Land and Beneficial Water Use Evaluations.** This section provides information regarding the locality of facility, and a summary of the land use and beneficial water use evaluations conducted during the Phase II RI, with information obtained during the Phase III investigation incorporated into the evaluation.

- **Section 5.0 Phase III Remedial Investigation Sampling.** This section describes the field investigative work and laboratory analyses performed during the Phase III RI.
- **Section 6.0 Geology and Hydrogeology.** This section presents the results of the Phase III RI and previous investigations with regard to the geologic and hydrogeologic conceptual model.
- **Section 7.0 Nature and Extent of Contamination.** This section describes the nature and extent of contamination at the Terminal based upon the Phase III RI and previous investigations, including a summary of preliminary screening levels.
- **Section 8.0 Conceptual Site Model.** This section identifies the conceptual site model for the Terminal including source areas and general and site-specific transport mechanisms and fate processes.
- **Section 9.0 Scope of Future Activities.** This section provides the scope of future planned activities to be conducted at the Terminal, including the continued implementation of the Phase II groundwater interim action, continued quarterly sampling of site monitoring wells, implementation of *in situ* chemical oxidation in the Phase II area, performance of a source control evaluation, and the Phase II/Phase III risk assessment and feasibility study.
- **Section 10.0 Proposed Schedule.** This section provides a proposed schedule for upcoming RI/FS activities.
- **Section 11.0 Use of This Report.**
- **Section 12.0 References.**

The appendices (Volume II) of this report include:

- **Appendix A.** This appendix contains summary information for soil explorations and monitoring wells and provides logs for explorations performed for this RI, the Phase II RI, and for historical wells installed prior to 1994, as available.
- **Appendix B.** This section provides water level measurements collected between 1996 to the present that were used to evaluate groundwater elevations and flow direction in this report.
- **Appendix C.** This appendix contains analytical data summary tables for detected constituents in soil for the Phase II RI and the Phase III RI, definitions of laboratory data validation qualifiers, and preliminary screening levels for soil.
- **Appendix D.** This appendix contains analytical data summary tables for detected constituents in groundwater for the October 2003 through November 2004 quarterly sampling events and from groundwater investigations conducted previously for the Phase III RI, definitions of laboratory data validation qualifiers, and preliminary screening levels for groundwater.
- **Appendix E.** This appendix contains Phase III RI soil data for September-October 2003 and October-November 2004 soil sampling events.

- **Appendix F.** This appendix provides data validation reports for Phase III RI soil and groundwater analyses not previously reported.
- **Appendix G.** This appendix provides laboratory data reports for the Phase III soil analyses not previously reported.
- **Appendix H.** This appendix provides cumulative groundwater data collected between April 1997 and November 2004 for wells monitored during quarterly groundwater sampling events. Because of the size of these tables, this appendix is provided only by CD with this report.

2.0 BACKGROUND INFORMATION

This section provides background information that was used in the evaluation of the nature and extent of contamination for the Phase III RI at the Time Oil Northwest Terminal. This section describes the Terminal and its operational history, summarizes available results from previous soil and groundwater investigations at the facility, outlines the regulatory framework of the RI process, and provides a summary of the current and historical facility permits and regulatory compliance.

2.1 FACILITY DESCRIPTION

The Northwest Terminal is a former bulk petroleum storage and transfer facility currently owned and operated by Time Oil. Time Oil ceased operations at the Terminal on October 31, 2001. From 1943 to 2001, the Terminal was operated by Time Oil as the Northwest Terminal petroleum products facility. Since operations began, the Terminal was used for the receipt, storage, and distribution of petroleum and petroleum-related products. Historically, Time Oil leased tank space to Crosby & Overton for storage of waste oils, and the Koppers Company leased tanks and property at the Terminal for the formulation and blending of pentachlorophenol (PCP)-containing wood treatment products.

The facility is located in Township 2 North, Range 1 West, Sections 34 and 35, in the industrialized Rivergate area of north Portland, Oregon (Figure 1-1). The Terminal is bordered to the east and south by heavy industrial complexes, to the north by heavy industrial property and Port of Portland undeveloped property, and to the west by the Willamette River (Figure 1-2). The Terminal is approximately 52 acres in size and is generally flat with an average land surface elevation of about 28 ft above mean sea level (MSL). The Terminal is enclosed by a terminal-wide chain link fence and access is through the main gate at the termination of Time Oil Road. Within the Terminal, there are several features that are distinguished by their historical uses, as shown on Figure 2-1. Of these areas, the following were included in the Phase III RI study area:

- **Former Northwest Terminal tank farm areas** where various petroleum products were stored and handled. Bulk product Terminal areas are located in the western and southern portions of the facility adjacent to the Willamette River. The tank farm areas include 21 aboveground storage tanks (ASTs) in the Main Terminal Tank Farm area and 10 ASTs in the Bell Terminal Tank Farm area. The storage tanks range from 3,000 to 80,000 barrels in size. In 1943 when the Terminal was first established, 12 of the original tanks were moved to the Main Terminal Tank Farm area from a location south of the current property. Between the mid to late 1950s and the late 1970s, additional tanks were added in both the Main Terminal Tank Farm area and in the Bell Terminal Tank Farm area bringing the areas to their current configurations. Most of the tanks appear to have been originally constructed on a sand or gravel base with perforated pipes (1¼ -inch) extending radially from the footprint of the tank. After the base was put in place during construction, the pipes were used to pump in an asphalt-type material to seal the base of the tanks. Also, asphalt was packed around the base

of the tanks to prevent erosion. Currently, all tanks are empty except for tank 16804 in the Main Terminal Tank Farm area, which temporarily stores recovered water from the groundwater interim action wells RW-2 and HRW-1, and water collected from the groundwater intercept system in the east-west trending storm drain at SDM-1 prior to treatment at the onsite wastewater treatment system. At the Bell Terminal Tank Farm area, historical aerial photographs indicate that a strip of land approximately 80 ft wide along the entire western property boundary and outside the wall surrounding the Bell Terminal Tank Farm area was apparently used by occupants of the adjacent property for storage of equipment and possibly other unknown activities for approximately 25 years, ending in about 2000.

- **Former butane and aviation gasoline storage areas** located to the southeast of the Terminal office. These areas include two ASTs for storage of aviation gasoline and one AST for butane storage. Currently, all tanks are empty.
- **Former petroleum transfer and receipt facilities** that include above-and below-ground piping; product receipt facilities via rail, truck, and vessel; and product distribution facilities via truck and rail (loading racks), and via marine vessels (a 380-ft dock in the Willamette River). A former rack for loading trucks is located just west of the Terminal office. A former loading rack for rail transfer and receipt is located at the terminus of the rail spur to the east of the Terminal office. A former loading rack for the Bell Terminal Tank Farm area is located at the eastern side of the Bell Terminal Tank Farm area. Historically in these areas, product was transferred from the railcar, truck, or vessel to the aboveground tanks through pipelines located near each of the receipt/distribution locations. None of these areas are currently in use.
- **Wastewater treatment system** located to the north of the Terminal office. The wastewater treatment system (WWTS) is used to treat Terminal stormwater runoff for the industrial portions of the Terminal; investigation wastewater (e.g., development and purge water from monitoring and recovery wells); and remediation wastewater (e.g., groundwater from the groundwater interim action system) before discharge to the sanitary sewer line along Time Oil Road under permit with the City of Portland (COP). Stormwater routed to the WWTS originates from former industrial areas of the main part of the Terminal, including the former loading rack along the rail spur, the former truck loading rack, the former valve pit on the vessel dock, and other former valve areas. Influent and effluent sampling results are documented in quarterly self-monitoring reports (SMRs) to the COP, conducted according to the permit requirements.
- **Storm drain lines** consisting of the main line running east-west along the length of the Terminal about 160 ft north of the southern property boundary. The stormwater collection system for the Phase I stockpile was abandoned or removed following completion of the stockpile removal action, as documented in the Phases I/II removal actions completion report (Landau Associates 2003a). Stormwater from the Terminal entrance area, the low topographic area east of the rail spur, and the East Property is collected into the main storm drain line for discharge into the Willamette River (Figure 2-2). In the fall of 2002, a groundwater intercept system was installed within the east-west trending storm drain to capture groundwater infiltrating into the concrete storm drain line between the two stormwater manholes located south of the horizontal recovery well (HRW-1). Installation activities are documented in the *Fourth Quarter 2002 Groundwater Monitoring and Groundwater Interim Action Status Report* (Landau Associates 2003b). Summaries of stormwater treatment and sampling are provided in the quarterly groundwater monitoring reports for the Terminal.

Stormwater sampling results are documented in annual discharge-monitoring reports (DMRs) to the COP, conducted according to the permit requirements.

- **Subsurface utilities** consisting of thousands of feet of pipeline underlying the facility and adjacent areas, including public utilities (e.g., electrical and water) and private utilities (e.g., hydrant lines). All product lines were flushed and cleaned upon cessation of operations at the Terminal.
- **Entrance, former office, warehouses, and equipment maintenance area** located in the northwest portion of the facility.
- **Dock** extending approximately 380 ft into the Willamette River from the terminal. During the period of Terminal operation between 1943 and 2001, the dock was used for the mooring of tanker ships while transferring petroleum products to pipelines located on the dock. No spills or releases have been documented or reported during the overwater activities. The dock is currently not in use.

Other features within the Terminal shown on Figure 2-1 that are currently being investigated or have been previously investigated and, therefore, were not included in the Phase III RI are:

- **Former PCP mixing area and warehouse** where specialty wood treating products containing PCP in various formulations (typically with petroleum-based carriers) were blended and stored for offsite shipment from 1967 to 1984 under an agreement with the Koppers Company. The former PCP mixing area is located in the approximate center of the Terminal, and includes the former PCP warehouse and the area south of the warehouse (formerly occupied by various mixing and storage tanks that were removed by 1982). During September through November 2002, soil removal action activities were conducted within the former PCP mixing area and associated areas. These activities included the demolition of the former PCP warehouse and the removal of approximately 6,400 yd³ of PCP-impacted soil from the former PCP mixing area. Removal activities are documented in the Phases I/II removal actions completion report (Landau Associates 2003a).
- **Former Crosby & Overton tank area** located directly south of the former PCP mixing area where waste oils were previously stored in two ASTs from 1974 to 1989 through a lease to Crosby & Overton. The tanks have since been removed from this area. Another AST (38009), removed during Phases I/II removal actions, was established in 1989 as a bioreactor during soil treatment activities for the former soil stockpile. Remedial action activities were conducted within the former Crosby & Overton tank areas in late 2002. Activities included the removal of 819 tons of polychlorinated biphenyls (PCB) and carcinogenic polycyclic aromatic hydrocarbons (cPAH)-impacted soil. Removal activities are documented in the Phases I/II removal actions completion report (Landau Associates 2003a).
- **Former soil stockpile area (Phase I RI area)** where approximately 3,600 yd³ of soil that was excavated from the former PCP mixing area in 1989 or was transferred from the East Property during interim removal actions in 1996-1997 was temporarily located. The stockpile was located southwest of the former PCP mixing area and north of an inactive soil treatment area. The former stockpile was removed during Phase I/II soil removal actions conducted in 2002. Stockpile removal activities are documented in the Phase I/II removal actions completion report (Landau Associates 2003a).

- **East Property area** located in the eastern portion of the facility is a currently and historically undeveloped area. A remedial action for the East Property resulted in the removal and disposal of 1,732 tons of PAH-impacted soil (Landau Associates 2003c). A conditional No-Further-Action (NFA) determination was granted to Time Oil by DEQ on November 24, 2003 (DEQ 2003a).

Investigations associated with these areas are discussed in further detail in the following sections.

Known or documented spills within the Main Terminal Tank Farm area based on Time Oil or DEQ records are summarized below. Subsequent investigations conducted in these areas to define any contamination associated with the spills are described in Section 2.2. A stormwater pollution control plan was prepared for the Terminal in December 15, 2000 and revised in August 2002 (Landau Associates 2002b).

Date	Material(s) Released	Volume Spilled (gallons)	Spill Surface (gravel, asphalt, sewer)	Action Taken (yes /no)
1975	Diesel	unknown	Soil in bermed area	Yes - Product recovery and soil removal
1990	Ethanol	~500 gallons	Soil in bermed area	Yes - Product and groundwater recovery
1994	Unleaded Gasoline	1,300 gallons	Soil in bermed area	Yes - Product recovery, soil vapor extraction test, and long-term groundwater monitoring
1999	Ethanol	2,479 gallons (suspected)	Subsurface soil	Yes - Installed recovery well and conducted groundwater monitoring; no product ever observed

2.2 SUMMARY OF PREVIOUS ENVIRONMENTAL INVESTIGATIONS AND INTERIM ACTIONS

This section summarizes the history of previous environmental site investigations and interim actions, including activities conducted under the Phase II RI, and previous investigations within the Phase III study area.

2.2.1 HISTORICAL ENVIRONMENTAL INVESTIGATIONS – PHASE III STUDY AREA

Beginning in 1984, a series of environmental investigations were conducted to evaluate the potential for soil and groundwater contamination due to former operations at the Terminal. These investigations included a site inspection by DEQ in 1984, removal of the Crosby & Overton truck-washing trough in 1986, test pit explorations near the Crosby & Overton truck-washing trough in

1989, and a groundwater and soil investigation conducted in 1994 in response to an unleaded gasoline spill in the Main Terminal Tank Farm area. These investigations are briefly discussed below.

2.2.1.1 1984 DEQ Site Inspection

As part of a DEQ site inspection in 1984, eight soil samples were collected in the Main Terminal Tank Farm area, one sample was collected in the former PCP mixing area, one sample was collected in the former Crosby and Overton tank area, and two samples were collected in the Bell Terminal Tank Farm area (DEQ 1985), as shown on Figure 2-3. Each sample was a composite of three depth intervals: ground surface, 1 ft below ground surface (BGS), and 2 to 3 ft BGS. The samples were analyzed for lead (EP toxicity), base-neutral semivolatiles, pesticides, and PCBs. Concentrations of these constituents were nondetect or at low concentrations, except in the central portion of the Main Terminal Tank Farm area where concentrations of PAH constituents (e.g., fluorene, phenanthrene, and anthracene) ranged from 13 mg/kg to 105 mg/kg. Also, at the locations in the former PCP mixing area and former Crosby & Overton tank area, concentrations of PCP were 1,820 and 515 mg/kg and concentrations of tetrachlorophenol were 71 and 12 mg/kg. No constituents were detected in the soil samples collected from the Bell Terminal Tank Farm area.

2.2.1.2 1986 Crosby & Overton Truck Washing Trough Remediation

In 1986, gravel used by Crosby & Overton for a truck-washing trough in the Bell Terminal Tank Farm area was excavated and the trough liner was removed and disposed at a private contractor facility (Crosby & Overton 1986). Two confirmation samples collected from the base of the excavation indicated oil and grease concentrations of 113 mg/kg and 30 mg/kg, respectively. The excavation was backfilled with clean fill material. In 1989, soil in the area of the truck-washing trough was sampled. The sample results indicated elevated levels of petroleum hydrocarbons (6,170 mg/kg). Base-neutral semivolatiles, metals, and PCBs were also analyzed, but were either present at concentrations less than the laboratory reporting limits (i.e., nondetect) or detected at low concentrations. In May 1989, about 300 yd³ of soil was excavated from the truck-washing trough area by Crosby & Overton and disposed at St. Johns Landfill. A composite soil sample was collected from the east wall, the bottom, and the west wall of the excavation, and analyzed for total petroleum hydrocarbons (TPH). The TPH sample result was 15 mg/kg. The area was backfilled with clean fill from an onsite location (Crosby & Overton 1989). The location of the former Crosby & Overton truck-washing trough is shown on Figure 2-3.

2.2.1.3 1989 Soil TPH Investigation

In June 1989, visibly impacted soil was encountered during excavation of soil planned for use as fill for the excavated area within the former PCP mixing area. In response, 14 test pits were excavated and soil and groundwater samples were collected by ECOVA. Twelve of the test pits were located within the Phase III study area (specifically, near the former butane storage area), as shown on Figure 2-3. A total of 13 soil samples and 4 groundwater samples were collected from this area and analyzed for total TPH by infrared scan. Soil TPH concentrations ranged from 174 mg/kg to 9,002 mg/kg (ECOVA 1989). TPH was not detected in the groundwater samples. Information regarding the depth of the test pits and samples is not available.

2.2.1.4 1994 Unleaded Gasoline Spill/Groundwater and Soil Investigation

In 1994, in response to an unleaded gasoline spill in the Main Terminal Tank Farm area, five groundwater monitoring wells (N, O, P, Q, and R) were installed in and downgradient of the release area (Figure 2-3). Also, Time Oil conducted a soil vapor extraction test within the shallow soil in this area. Soil samples from the well borings indicated that soil from shallow wells N, P, and Q showed evidence of contamination by gasoline-range and diesel-range petroleum hydrocarbons. The soil at the top of the upper water-bearing zone (upper zone) in well Q exhibited the highest gasoline-range concentration (210 mg/kg) and the highest diesel-range concentration (16,430 mg/kg) (Landau Associates 1994). Water levels and product thickness (when observed) in these wells are monitored as part of the Phase II RI quarterly groundwater sampling events. Light non-aqueous phase liquid (LNAPL) has been observed intermittently at wells N, P, and Q since July 1997.

2.2.2 PHASES I AND II REMEDIAL INVESTIGATIONS AND INTERIM REMEDIAL ACTIONS

In addition to the soil and groundwater investigations conducted between 1984 and 1996, two remedial investigations were conducted at the Terminal from 1996 through 1999. These included a Phase I RI focused on the former soil stockpile area (Figure 2-1) and a Phase II RI focused on the former PCP mixing area and the former Crosby & Overton area (Figure 2-1). Investigations were also conducted for 21 acres of property located along the easternmost portion of the Terminal (referred to as the East Property), as shown on Figure 2-1. Additionally, in 2002, soil removal actions were completed for the soil stockpile, the former PCP mixing/warehouse areas, the former Crosby & Overton area, and on the East Property. Summaries of the investigations and remedial actions are included in the following sections. Further information regarding these investigations can also be found in the Phase I RI report (Landau Associates 1997a), the Phase II RI report (Landau Associates 2001b), the East Property

predevelopment investigation (EPPI) results report (Landau Associates 2001c), the Phases I/II removal actions completion report (Landau Associates 2003a), and the East Property soil remedial action completion report (Landau Associates 2003c).

2.2.2.1 Former PCP Mixing Area and Warehouse

The previous sampling events conducted in and adjacent to the former PCP mixing area and warehouse included the following:

- 1984 to 1989 - Several soil sampling and remediation events were conducted within the former PCP mixing area and below the former PCP warehouse during this period. The main focus of the historical investigations was to identify the extent of PCP contamination within and adjacent to the former PCP mixing area resulting from historical use of these areas for formulation of wood treatment products. In 1989, approximately 3,000 yd³ of soil was excavated from this area and placed into the current soil stockpile, as described earlier. Soil PCP data from the historical sampling events, containing only data representing soil concentrations remaining within the former PCP mixing area after the 1989 excavation, are included on Figure 2-4.
- Phase II RI – Conducted in fall 1996 and spring 1997, the Phase II RI included the following activities:
 - Soil Investigations: sampling and analyses of soil from 45 shallow soil borings and cone penetrometer test (CPT) explorations, 5 surface soil samples, 25 new shallow and deep monitoring and recovery well borings, and 2 dust samples from the rafters of the former PCP warehouse.
 - Groundwater Investigations: sampling and analyses of groundwater during an initial groundwater screening event in October 1996 and from selected wells in March 1997, sampling and analysis of groundwater using direct-push methods during February 1998 and February through April 1999, drilling and installation of four shallow and five deep monitoring wells and two recovery wells (one shallow and one deep) during February through April 1999, quarterly water quality sampling and analyses from March 1997 to the present, aquifer testing in May through June 1999, and installation of a third recovery well in November 1999.
 - Abandonment of five shallow wells and one well point.
 - Land use and beneficial water use evaluations.
- Phase II Supplemental Sampling - In September 2001, supplemental soil sampling was conducted within and adjacent to the former PCP mixing area and former PCP warehouse to evaluate the extent of soil contamination and to address data gaps identified by DEQ in its comments on the Phase II RI report (DEQ 2000a). Soil samples were collected from 15 soil borings in and around the former PCP mixing area. Sample results for soil remaining after the removal action, including results from this event, are included on Figure 2-4.
- Pre-Removal Investigation (PRI) - In August 2002, soil was collected and analyzed from the following: 1) three locations in the area previously identified as “clean fill” or overburden

from the 1989 excavation within the former PCP mixing area to determine whether this material could be reused as backfill following the removal action, 2) seven locations near the perimeter of the proposed excavation to provide additional data coverage, and 3) five locations where PCP concentrations were expected to range between 5 and 20 mg/kg to demonstrate that groundwater concentrations would not be adversely impacted by residual soil PCP concentrations of 5 mg/kg or less, if left in place at the completion of the removal action. PCP results for the soil remaining after the removal action, including samples from this event, are shown on Figure 2-4. The results for the groundwater protection evaluation demonstrate that use of 5 mg/kg as a cleanup target for the soil removal action is protective of surface water receiving groundwater migrating from the former PCP mixing area. Detailed results for the PRI are provided in a technical memorandum prepared by Landau Associates in September 2002 (Landau Associates 2002c).

During the fall of 2002, the PCP warehouse was demolished and PCP-impacted soil from the former PCP mixing area and adjacent area to the south and from beneath the footprint of the former PCP warehouse was excavated for offsite incineration and disposal. The removal action work plan required the soil to be designated into three types for proper handling, including “clean” overburden soil, “impacted” soil, and “high PCP-impacted” soil. The extent of the excavation was further divided into three excavation depths or tiers to minimize sloughing of clean ground surface and sidewall soil into the excavation, to limit the need for shoring, and to allow for reasonable segregation of PCP-impacted soil and the clean fill. These depths included the 0 to 0.5 ft BGS, 5 to 10 ft BGS, and 10 to 13 ft BGS tiers. PCP-impacted soil was removed to a maximum depth of 13 ft BGS, the approximate depth of the water table at the time of excavation. Because of limitations associated with excavation below the groundwater table, this was the maximum depth of excavation. Approximately 1,700 yd³ of clean overburden soil was removed from the excavation, stockpiled, and ultimately used as backfill for the excavation. The soil removal activities resulted in the excavation of approximately 6,400 yd³ of PCP-impacted soil, including approximately 90 yd³ of high PCP-impacted soil from beneath the southwest corner of the former PCP warehouse. The PCP-impacted material was incinerated and disposed at the Swan Hills Treatment Center in Swan Hills, Alberta, Canada.

Following the completion of the *in situ* soil removal activities, soil verification samples were collected from the base and the sidewalls of the excavation to document PCP concentrations remaining in soil. A total of 18 sidewall and 8 base of excavation verification samples were collected to represent PCP concentrations remaining in soil within the former PCP mixing area at completion of the removal action. Figure 2-4 shows the boundaries of the excavation and PCP concentrations remaining in soil following the removal action.

PCP concentrations for the soil verification samples collected from the 0 to 5 ft BGS tier and 5 to 10 ft BGS tier were all less than the removal target of 5 mg/kg, as shown on Figure 2-4. All of the final verification sample PCP results collected from the western and southwestern portions of the base of

excavation (10 to 13 ft BGS) exceeded the 5 mg/kg target with PCP concentrations up to about 45 mg/kg. Removal action activities and documentation are provided in the Phases I/II removal actions completion report (Landau Associates 2003a).

2.2.2.2 Former Soil Stockpile

As discussed in the previous section, environmental investigations and removal actions conducted by and for Time Oil since 1984 resulted in the 1989 excavation of approximately 3,000 yd³ of PCP-impacted soil from the former PCP mixing area. The excavated soil was stockpiled onsite in a bermed and lined area southwest of the mixing area and north of the former soil treatment (bioremediation) area (Figure 2-1). The stockpile was covered to minimize dust generation and contact with precipitation, and to minimize exposure to PCP-impacted soil by human and ecological receptors. Additional soil samples were collected for PCP analyses in 1989 from within the area where excavated soil was to be stockpiled and within the soil treatment area (ECOVA 1991). All sample results were reported as nondetect.

In 1990, eight samples were collected from the soil stockpile for PCP analyses; the eight samples were composited into two samples for dioxin/furan analysis

For the Phase I RI in September 1996, soil samples were collected from 10 borings in the soil stockpile (Landau Associates 1997a). Samples collected at each location were composited over the full depth of the stockpile, ranging from about 3 to 14 ft BGS. The soil samples were analyzed for semivolatile organic compounds (SVOCs), chlorinated phenols, TPH, priority pollutant metals, and volatile organic compounds (VOCs). Two samples were also analyzed for dioxins and furans; the sample with the highest PCP concentration was analyzed for PCP by the toxicity characteristics leaching procedure (TCLP). More detailed information on the results for the 1990 sampling and the Phase I RI was provided in the Phase I RI report (Landau Associates 1997a). In the fall of 1996, Time Oil upgraded the management of the stockpile to incorporate a new cover system and improved stormwater collection system (Landau Associates 1996). An additional 600 yd³ of PCP-contaminated soil was added to the stockpile in the fall of 1996 and fall of 1997, with DEQ's approval, following interim removal actions on the undeveloped eastern portion of the property and investigation activities for the Phase II RI. An additional 10 yd³ of soil from well drilling activities for the Phase II RI were added to the stockpile in August 1999.

In May 2001, soil samples were collected from 18 locations in the soil stockpile to determine the pre-removal soil concentrations. The soil samples were analyzed for SVOCs, metals, dioxin and furan compounds, biological parameters, and soil physical parameters. PCP was considered to be the indicator compound for the soil stockpile and the remaining constituents were evaluated for purposes of profiling the soil for disposal. Detailed results are provided in the Phase I FS (Landau Associates 2001d).

In the fall of 2002, in conjunction with the *in situ* soil removal of PCP-impacted soil from the former PCP mixing area (as discussed in Section 2.2.2.1), the soil stockpile was incinerated and disposed at the Swan Hills Treatment Center in Swan Hills, Alberta, Canada. The soil removal activities resulted in the removal of approximately 2,400 yd³ of PCP-impacted soil from the stockpile area. (The soil stockpile was volumetrically reduced from about 3,600 yd³ to about 2,400 yd³, likely due to compaction from construction equipment used on the stockpile and longer-term settlement since original construction. The total mass of the stockpile had not changed since 1999.) Around this time, equipment in the former soil treatment area was also decontaminated and removed from the Terminal for reuse.

Following the removal of the soil stockpile, soil verification samples were collected beneath the footprint of the former soil stockpile. Results for seven soil samples represent concentrations of PCP in soil remaining following the removal activities. Figure 2-5 presents the verification sampling locations and final PCP concentrations. Final soil PCP concentrations ranged from nondetect to 1.46 mg/kg. Dioxin/furan and metals analysis were also performed at two of the locations (SP-1-CONF and SP-3-CONF); the analytical results ranged from 13.7 nanograms per kilogram [ng/kg (SP-1-CONF)] to 1,135.56 ng/kg (SP-3-CONF) [as total equivalency quotient (TEQ)]. Concentrations of the six metals analyzed (arsenic, chromium, copper, lead, nickel, and zinc) ranged from nondetect to 354 mg/kg (zinc) with the highest concentrations occurring at sample location SP-3-CONF. Removal activities are documented in the Phase I/II removal actions completion report (Landau Associates 2003a).

2.2.2.3 Former Crosby & Overton Tank Area

From 1974 to 1989, two ASTs (5006 and 10002; shown on Figure 2-1) were leased from Time Oil by Crosby & Overton for storage of materials generated from offsite projects. Crosby & Overton reportedly provided services to collect and store waste oils from separators, oil slop tanks, ship tank cleaning, and related tasks.

Analytical results from investigations conducted in the Crosby & Overton tank area between 1987 and 1989 showed elevated PCB concentrations in soil associated with waste oil releases that occurred historically from the tanks and led to soil removal in this area.

In 1997, as part of the Phase II RI, soil samples were collected from 13 borings and 2 well boreholes within the Crosby & Overton tank area. The Phase II RI sample results indicated concentrations of PCBs ranging from less than 1 mg/kg to 16 mg/kg and PAHs ranging from less than 1 mg/kg to 67 mg/kg in the upper 6 inches of soil. The occurrence of PAHs in this area appears to be from the presence of asphalt-containing tank foundations and, to possibly a lesser extent, from the presence of historical asphalt-containing roadbed material, based on historical aerial photographs.

In 2002, in conjunction with the removal action conducted within the former PCP mixing area, soil removal activities were also conducted within the Crosby & Overton tank area. Removal activities consisted of excavating soil from depths of 0.5 to 2.5 ft BGS from the Crosby & Overton Tank Farm area. Figures 2-5 and 2-6 show the final excavation extents and depths for soil removal within the tank area. A total of 819 tons of soil were removed from the Crosby & Overton tank area for thermal treatment and disposal at the TPS Technologies, Inc. facility in Lakewood, Washington. Following soil removal activities, verification sampling was conducted within the removal areas. A total of six samples document final concentrations remaining in soil at the base of excavation. Sample results for the excavated areas for total PCBs and selected cPAHs are shown on Figures 2-5 and 2-6, respectively. Soil removal activities were documented in the Phases I/II removal actions completion report (Landau Associates 2003a).

2.2.2.4 East Property

In 1996-1997, Time Oil conducted a limited investigation of the East Property to identify, remove, and dispose of PCP-related wastes that originated from PCP formulation activities conducted within the former PCP mixing area from 1967 to 1984. The wastes were located in and adjacent to a topographic low (referred to as the former drum area, Figure 2-1) in and adjacent to a small stockpile area, and in several other isolated locations on the East Property. Removal activities consisted of removal of over 100 55-gallon drums and approximately 200 yd³ of soil and debris from the former drum area. In addition, approximately 300 yd³ of soil and other debris found in a small stockpile and several other localized areas with stressed vegetation were removed. Confirmation samples collected from each of these areas indicated that PCP-impacted soil was successfully removed to concentrations below U.S. Environmental Protection Agency (EPA) Region 9 preliminary remediation goals (PRGs) for residential soil and that soil impacted by other constituents (e.g., metals) was removed from each area to concentrations below the PRGs for industrial soil, and, in some areas, to below PRGs for residential soil.

Also, as part of the 1996-1997 investigation and interim removal activities, soil characterization samples were collected from the topographic mound (Figure 2-1). A few of the topographic mound soil samples contained detectable levels of PCP and PAHs. The concentrations of PCP and PAHs detected in all of the samples were less than the PRGs for industrial soil and some of the samples were also below the PRGs for residential soil. With concurrence from DEQ, the 1996-1997 removal action on the East Property is considered to be complete, and no further action in those areas is necessary (DEQ 1998a).

In March 1997, as part of the Phase II RI for the Terminal, two soil borings and four monitoring wells (LB-121, LB-122, LW-101S, LW-102S, LW-103S, and LW-104S) were completed within the East Property. The monitoring wells were installed to monitor groundwater concentrations in the areas where

PCP was observed in the soil. The soil borings and monitoring wells were also used to establish site-specific soil and groundwater background concentrations for the Terminal. The monitoring wells were placed on a quarterly sampling schedule until May 1998 when sampling was reduced to an annual basis for a reduced set of constituents. Sampling results for the monitoring wells were nondetect or detected at concentrations below DEQ levels of concern, demonstrating that there was no migration of contaminants from soil to groundwater in this area; the results are provided in quarterly groundwater monitoring reports for the site. Monitoring wells LW-101S through LW-104S were abandoned in August 2003 following the remedial action for the East Property.

In 2000-2001, investigations were conducted on the East Property to evaluate whether hazardous substances were present in soil and groundwater at concentrations that would require additional action in advance of potential lease or sale of the property by Time Oil and to identify soil removal areas and the extent of cPAH contamination. Using DEQ risk assessment screening methods (DEQ 1999, 2000b) and a statistical evaluation of the soil data to demonstrate compliance with DEQ's soil cleanup levels (SOCLEAN) for industrial soil (OAR 340-122-045), seven cPAH compounds were identified as chemicals of potential concern (COPC) or chemicals of potential ecological concern (CPEC) (COPCs/CPECs) for the surface soil. These compounds included: benzo(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-cd)pyrene, dibenz(a,h)anthracene, benzo(k)fluoranthene, and chrysene. No COPCs/CPECs were identified in subsurface soil at concentrations exceeding the SOCLEAN levels for industrial soil. Sixteen soil removal areas, located mainly adjacent to historical and current roads, were identified as having surface soil with at least one of the five retained COPCs/CPECs at concentrations above the SOCLEAN levels for industrial soil. The presence of cPAHs in soil on the East Property appeared to be related to historical road oiling as documented in historical photographs from the late 1960s through 1970s. A remedial action plan for the East Property (Landau Associates 2002d) was implemented following DEQ's approval (DEQ 2002) during the fall of 2002.

The remedial action for the East Property included the removal of approximately 1,732 tons of soil for thermal treatment and disposal at TPS Technologies, Inc., in Portland, Oregon. In addition, approximately 90 tons of mixed asbestos-containing material and soil were removed and disposed at the Wasco County Landfill in The Dalles, Oregon. As part of the remedial action activities, a total of 81 verification samples were collected from the 16 soil removal areas. The verification sample results were used to indicate that remedial action objectives were met through performance of a statistical evaluation for comparison to the SOCLEAN levels (90 percent upper confidence limit on the true population mean). The results from the East Property investigations and the remedial actions are provided in the EPPI results technical memorandum (Landau Associates 2001c) and the East Property remedial action completion

report (Landau Associates 2003c). DEQ granted a conditional NFA determination for the East Property in a letter dated November 24, 2003 (DEQ 2003a). The NFA determination is contingent upon industrial site uses limiting suitable habitat to sensitive ecological receptors. An equitable servitude and deed restriction has been recorded on the property.

2.2.2.5 Quarterly Groundwater Monitoring Events

Quarterly groundwater monitoring events were initiated as part of the Phase II RI in March 1997. In total, 31 quarterly events have been conducted between March 1997 and November 2004 as part of the Phase II RI activities. Since the January 1998 sampling event, quarterly data have been provided to DEQ in quarterly groundwater monitoring reports. Sampling of the Phase III RI monitoring wells began with the fourth quarter 2003 groundwater sampling event and has continued on a quarterly basis to date. For this report, only one quarter of data, the fourth quarter 2004 data collected in November 2004, is available for the wells installed in October-November 2004. A summary of analyses conducted for each monitoring location since monitoring began is provided in Table 2-1. Groundwater level measurements conducted during the quarterly events are provided in Table B-1. Modifications to the sampling program approved by DEQ are summarized in Table 2-2. The fourth quarter 2004 groundwater sampling event conducted in November 2004 consisted of sampling 23 upper zone wells and 27 lower water-bearing zone (lower zone) wells. Groundwater sampling locations are shown on Figure 2-7.

2.2.2.6 Groundwater Interim Action

To prevent further migration of PCP in upper zone and lower zone groundwater at the Terminal, a groundwater interim action was implemented. The system consists of two groundwater extraction wells, a horizontal well (HRW-1) in the upper zone and a vertical well (RW-2) in the lower zone, and a groundwater intercept system in the east-west trending storm drain at the manhole closest to the Willamette River (SDM-1). Recovery well locations and the storm drain are shown on Figure 2-7.

Pumping within the lower zone from recovery well RW-2 began in October 2000. Since startup of recovery well RW-2, with the exception of periodic shutdowns for system maintenance, groundwater has been extracted continuously from the lower zone. Through December 2004, approximately 16 million gallons of water have been removed from the lower zone at RW-2 and transferred to the onsite wastewater treatment system for subsequent treatment and discharge to the sanitary sewer under a NPDES permit with the COP, as shown in Table 2-3. Additional information regarding the quarterly status of the groundwater interim action is provided in quarterly groundwater monitoring reports for the Terminal.

The horizontal well was installed in the upper zone during April 2000. During installation activities for HRW-1, a lateral from the main storm drain was penetrated. This launched an investigation into the impact of the east-west trending storm drain, located approximately 15 to 20 ft south (downgradient) of HRW-1, on the upper zone groundwater. Samples were collected from two manhole locations (SDM-1 and SDM-2) and from the stormwater drain outfall at the discharge point into the Willamette River and analyzed for PCP. Results indicated that groundwater from the upper zone was infiltrating into the concrete stormwater drain. Results of this sampling are presented in Table 2-4.

In conjunction with the storm drain outfall sampling, four piezometers (PZ-1 through PZ-4) were installed, and water level monitoring was performed in April and May 2000 in the area of the storm drain and HRW-1. The water level monitoring indicated that the water level in HRW-1 was lower than in the surrounding upper zone monitoring wells. From the water level data collected to date, information collected regarding the storm drain line, and the nature of the confining unit (described in Section 6.2.2), it is believed that there is a hydraulic interconnection between the upper and lower zones in the area of the horizontal well. Based on this information and observed conditions, pumping of HRW-1 is limited to the wetter months of the year (i.e., December through May). Table 2-3 summarizes pumping for the upper zone interim action through November 2004. Approximately 271,600 gallons of groundwater have been removed from HRW-1 since startup and transferred to the onsite wastewater treatment system for subsequent treatment and discharge to the sanitary sewer under a NPDES permit with the COP. Additional information regarding the status of HRW-1 is also provided in the quarterly groundwater monitoring reports for the Terminal.

Due to the inability to operate HRW-1 during the drier months from June through November and the potential for upper zone groundwater to infiltrate into the storm drain line, a groundwater intercept system was installed in the storm drain line on October 8, 2002, at the manhole (SDM-1) located closest to the point of discharge to the Willamette River (Figure 2-2). The system consists of an 8-inch diameter polyethylene pipe routed through the 15-inch storm drain line from manhole SDM-1A through manhole SDM-1. Stormwater from the East Property and Terminal office area is routed through the 8-inch liner pipe and discharged to the Willamette River. Potentially impacted groundwater entering the storm drain pipe between manholes SDM-1A and SDM-1 is routed through the annulus between the pipes and is collected in manhole SDM-1. The intercepted water is pumped from the manhole to Tank 16804 for processing by the onsite wastewater treatment plant. The installation information for the groundwater intercept system was provided in the fourth quarter 2002 groundwater monitoring report (Landau Associates 2003b). Status of the groundwater intercept system is provided in the quarterly groundwater reports for the Terminal.

2.2.2.7 *In Situ* Chemical Oxidation Interim Action

To further facilitate the remediation of PCP contamination in the groundwater and soil at the Terminal within the upper zone, the *in situ* chemical oxidation (ISCO) technique has been implemented. The primary objectives of the ISCO interim remedial action were to reduce the concentration of PCP present in upper zone groundwater within the PCP source area, to reduce the extent of the PCP plume in the upper zone groundwater, and to reduce the concentration of PCP in the soil located within the zone of groundwater fluctuation (i.e., smear zone). The specific type of chemical oxidation that was implemented for the interim action is based on Fenton's Reagent oxidation technology as applied by In-Situ Oxidation Technologies, Inc. (ISOTEC) of Englewood, Colorado. The Fenton's Reagent chemical oxidation reaction is created by the combination of soluble iron with low concentrations of hydrogen peroxide to produce hydroxyl radicals ($\bullet\text{OH}$). The hydroxyl radical is a short-lived oxidizer that is very powerful, second only to fluorine in oxidative power. The hydroxyl free radicals attack the carbon double bonds of chlorinated hydrocarbons (e.g., PCP). Iron is used to catalyze the reaction.

Bench Scale and Pilot Studies

Use of the ISCO technique was originally assessed during a bench scale laboratory study and a pilot study conducted within and downgradient of the former PCP mixing area in September 2002. The results of the bench scale study and pilot test are provided in 2002 and 2003 ISOTEC reports, respectively (ISOTEC 2002, 2003).

For the pilot test, ISOTEC injected reagents into 10 locations within and downgradient of the former PCP mixing area. The material injected included 17 percent hydrogen peroxide, complexed iron solution, and tap water. The injection points were driven to a depth of 19 to 19.5 ft BGS and spaced 25 ft apart based on a 12.5 ft estimated radius of influence (ROI). The ROI was estimated based on site lithology, contaminant concentrations, and ISOTEC's previous experience. The depths were chosen so that the reagent could be delivered to the saturated zone between the water table at approximately 16 ft BGS and a silt layer at approximately 19 ft BGS.

Following the injection of the hydrogen peroxide solution, groundwater and soil samples were collected to evaluate the effectiveness of the pilot test. Results from the testing indicated that the pilot study was successful in reducing the concentration of PCP in soil and groundwater (ISOTEC 2003).

Full Scale Implementation

Following the documentation of a successful pilot study using ISCO techniques (ISOTEC 2003), Landau Associates prepared a work plan for implementation of a full-scale ISCO interim remedial action

approach at the site (Landau Associates 2002a). The work plan was approved by DEQ on July 6, 2004 (DEQ 2004a).

In July 2004, a full-scale ISCO injection was implemented to treat PCP-impacted soil and groundwater in the upper zone within the boundaries of the PCP plume. The details of the first full scale injection are included in the third quarter 2004 groundwater monitoring and groundwater interim action status report (Landau Associates 2005a), and are summarized below.

From July 12 through 16, 2004, Time Oil's contractor (ISOTEC) injected ISCO reagents (17 percent hydrogen peroxide, complexed iron catalyst, and tap water) at 40 (IP-1-A through IP-21-A, and IP-23-A through IP-41-A) direct-push injection points located in the former source area of PCP impacts and downgradient of the source area. In addition, ISCO reagents were pumped into six lateral injection wells (MPLINE-01, -02E, -02W, -03E, -03W, and -04) located in the former PCP source area. The approximate locations of the direct-push ISCO injection points and lateral injection wells are shown on Figure 2-8).

The injection points were direct-push probes installed by the drilling contractor (Cascade Drilling, Inc.) and consisted of 1.5-inch diameter, 3-ft long injection screens attached to the bottom of the direct-push rods. The injection points were driven to a depth of approximately 19 ft BGS and spaced approximately 40-ft apart. The ISCO reagents were delivered at a depth of approximately 16 to 19 ft BGS (1 to 4 ft below the groundwater table). The ISCO injection typically consisted of approximately 200 gallons of hydrogen peroxide, 200 gallons of iron catalyst, and 60 gallons of water at each direct-push point. A total of approximately 7,650 gallons of 17 percent hydrogen peroxide, 7,650 gallons of iron catalyst, and 2,330 gallons of tap water were injected into the subsurface using the direct-push points. Based on the apparent effectiveness of the July 2004 ISCO event in reducing PCP concentrations in the upper zone groundwater, the radius of influence assumed for the injection points of approximately 25 ft appears to be accurate.

The six lateral injection wells are constructed of 4-inch diameter, schedule 40 PVC pipe with solid wall risers and horizontal sections comprised of alternating sections of solid wall pipe and well screen pipe. ISCO reagents were pumped into the lateral injection wells through the solid wall risers to diffuse into the groundwater formation through the well screen pipe. The horizontal portion of each of these lateral injection wells is located at approximately 12.5 ft BGS. Approximately 100 gallons of hydrogen peroxide, 100 gallons of iron catalyst, and 60 gallons of tap water were pumped into each of the two vertical risers at each lateral injection well. A total of approximately 1,200 gallons of 17 percent hydrogen peroxide, 1,200 gallons of iron catalyst, and 720 gallons of water were pumped into the subsurface using the lateral injection wells.

Based on comparison of groundwater analytical data collected in February and July 2004 prior to the injection (baseline) with post-injection groundwater data, the PCP concentration in the upper zone groundwater monitoring wells (RW-1, LW-11S, LW-13S and OX-1S through OX-4S, OX-6S, OX-7S, and OX-8S) was reduced by 63 percent (OX-8S) to 92 percent (OX-3S). The PCP concentration in the deep groundwater monitoring well (LW-11D) was reduced from 1.5 µg/L to less than 0.5 µg/L. The PCP concentration in the water collected from SDM-1 was reduced from 1,000 µg/L to 158 µg/L.

Comparison of the PCP plume concentrations in the upper zone using the June 2004 (Figure 2-9) and August 2004 (Figure 2-10) data, shows an apparent reduction in the estimated lateral extent of the plume in the east-west direction. However, the north-south extent of the plume remains relatively unchanged, although PCP concentrations were significantly reduced. The extent of the PCP plume in the lower zone groundwater before and after the injection was negligible.

The mass of PCP in the upper zone groundwater prior to the ISCO injection in July 2004 was estimated to be approximately 1.01 pounds, based on the groundwater samples collected in June 2004. The mass of PCP in the upper zone groundwater following the ISCO injection in July 2004 was estimated to be approximately 0.32 pounds, based on the groundwater samples collected in August 2004. The PCP mass calculations are provided in Appendix G of the third quarter groundwater monitoring and groundwater interim action status report (Landau Associates 2005a). Based on the mass calculations, it appears that the ISCO injection in July 2004 may have caused a mass reduction of PCP of approximately 0.69 pounds, or 68 percent.

Baseline and post-injection concentrations of dioxin/furan compounds were also monitored at three wells to determine whether there was any change due to implementation of the ISCO technique. The results indicated the following:

- The Total Equivalency Quotient (TEQ) in RW-1 increased from 0.00016272 ng/L to 0.001402 ng/L.
- The TEQ in OX-2S decreased from 0.11 ng/L to 0.02922 ng/L.
- The TEQ in OX-6S increased from 0.003588 ng/L to 0.300869 ng/L.

At this time, it cannot be definitively determined if the change in dioxin/furan compound concentrations can be attributed to the ISCO injection; however, the concentration of dioxin/furan compounds will be monitored in these three wells in the future to determine if there are changes in concentration trends that can be attributed to future ISCO injection events.

A second full scale ISCO injection event was conducted in January 2005. The results of this event are pending and will be provided to DEQ with the first quarter 2005 groundwater monitoring and groundwater interim action status report (Landau Associates in preparation),

2.2.3 PHASE III REMEDIAL INVESTIGATIONS

As described in Section 1.1, the Phase III RI was focused on areas of the Terminal where no extensive soil or groundwater investigations had been previously performed as part of the Phase I, Phase II, or East Property investigations. These areas are referred to as the Phase III study area (shown on Figure 1-2). For purposes of identifying and addressing data gaps, the Phase III investigative work was performed in three stages: a preliminary evaluation, an interim subsurface investigation, and the Phase III RI. Activities associated with the preliminary evaluation and interim subsurface investigation, and the results of these investigations, were previously documented in technical memoranda titled *Phase III Preliminary Evaluation* (Landau Associates 2002e) and *Phase III RI – Interim Subsurface Investigations* (Landau Associates 2003d).

The following sections summarize the preliminary evaluation and interim subsurface investigations conducted as part of the Phase III RI.

2.2.3.1 Preliminary Evaluation

The preliminary evaluation, conducted during the fall of 2001, was performed to identify whether hazardous substances had been released to the environment within the Phase III study area; to evaluate the general distribution of the hazardous substances, if found, in groundwater and soil; and to collect geological, hydrogeologic, and chemical data in advance of a full-scale Phase III RI. The preliminary evaluation included identification of 17 potentially impacted areas based on a review of historical aerial photographs and a review of historical operations at the terminal. These areas are described in Table 2-5 and shown on Figure 2-7. During the preliminary evaluation, 35 biased soil samples were collected from these potentially impacted areas and submitted for laboratory analysis. However, because the Phase III study area also includes several acres outside of these potentially impacted areas, an area-wide soil sampling approach (in conjunction with a biased sampling approach) was used to characterize soil during the preliminary evaluation. The area-wide approach included dividing the Phase III area into 27 200-ft by 200-ft grids, randomly selecting two to three soil sample locations within each grid, and compositing samples within a grid. This approach distributed soil sample locations throughout the 24-acre wide Phase III study area. Seventy-eight area-wide soil samples were collected from the 27 random grid-based sampling locations and submitted for laboratory analysis. The biased sampling locations within the 17 potentially impacted areas, the grid layout, and the random-based grid sampling locations are shown on Figure 2-7. In addition to soil sample collection, discrete groundwater samples were collected from 23 temporary well points located within the Phase III study area. The groundwater sampling locations were

selected to evaluate groundwater conditions where monitoring wells did not exist at the time of the preliminary evaluation. Discrete groundwater sampling locations (GW-#) are shown on Figure 2-11.

Also, during implementation of the preliminary investigation, Schnitzer Investment Corporation (Schnitzer) collected soil and groundwater samples at nine direct-push borings located on the Time Oil property just west of the Bell Terminal Tank Farm area. These samples were collected as part of an investigation being performed at the former PEO property located directly south and west of the Terminal. During the sampling, Landau Associates collected split soil and groundwater samples at the nine borings for Time Oil. The soil boring locations (SCH-#) are shown on Figure 2-7.

Results from the preliminary evaluation and the Schnitzer split sampling are provided in the Phase III preliminary evaluation technical memorandum (Landau Associates 2002e). Further discussion regarding sampling locations and analysis is provided in Section 5.1 of this report. A discussion of the preliminary evaluation results with the other Phase III RI results is provided in Section 7.0.

2.2.3.2 Interim Subsurface Investigation

Three subsurface investigations were conducted at the Terminal in July 2002 as part of the Phase III RI for the site. The investigations included: 1) a subsurface geology investigation within the Phase III study area using the cone penetrometer technique (CPT), 2) an investigation to better characterize soil and groundwater concentrations in the Bell Terminal Tank Farm area that were identified during the preliminary evaluation, and 3) a focused investigation to better define the extent of soil contamination identified in selected areas of the Phase III study area during the preliminary evaluation. Results from these investigations are presented in the Phase III interim subsurface investigation technical memorandum (Landau Associates 2003d) and are summarized below.

The CPT investigation was conducted to further evaluate the subsurface geology and hydrogeology of the Phase III study area, specifically regarding the extent of the confining unit and the interconnection between the upper and lower groundwater zones. Twenty-seven CPT explorations were completed at locations throughout the Phase III study area (Figure 2-11). Information regarding soil behavior type and static water level at various depths was used to refine the geological and hydrogeologic conceptual site model. The geologic and hydrogeologic information from the CPT borings are discussed in Section 6.0 of this report.

Along with the CPT investigation, soil and groundwater samples were collected within the Bell Terminal Tank Farm area following the detection of gasoline-range and diesel-range petroleum hydrocarbons in soil and groundwater during the Schnitzer investigation. To evaluate the source of the contamination, soil samples were collected at several depth intervals from ten locations (shown on Figure 2-7) within the Bell Terminal Tank Farm area. Shallow groundwater samples were also collected

from each of the ten locations. Sampling locations and methods along with the analytical results are discussed in Sections 5.1 and 7.0 of this report.

In conjunction with the CPT investigation, five discrete soil samples were collected to better define the extent of contamination detected in the capillary fringe soil where only composited samples were previously collected. The discrete soil samples were collected within the Phase III preliminary evaluation sampling grids 2, 12, 13, and 21 for chemical analyses (Figure 1-2). Results from the additional discrete soil sampling are discussed in Section 7.0 of this report.

2.3 REGULATORY SETTING

In July 1991, Time Oil entered into a VCP agreement with DEQ for DEQ review and oversight of cleanup of hazardous substances at the Terminal (DEQ 1991). Time Oil was notified in May 1992 (DEQ 1992) that the project was being referred to the Resource Conservation Recovery Act (RCRA) program in lieu of continued work with the VCP. Subsequently, at DEQ's request, Time Oil submitted a site characterization report to DEQ in August 1993 (Landau Associates 1993a) and submitted a draft RCRA facility investigation (RFI) work plan for the former PCP mixing area to DEQ in December 1993 (Landau Associates 1993b). In the spring of 1994, DEQ verbally advised Time Oil that the project would be transferred back to the VCP and, in October 1995, Time Oil received correspondence from DEQ formally reinstating the project to DEQ's VCP (DEQ 1995). A VCP agreement between Time Oil and DEQ was finalized on September 5, 1996. Since that time, investigations at the Terminal have been conducted in accordance with the state of Oregon's Hazardous Substance Remedial Action Rules (OAR 340-122), and associated guidance documents. The guidance documents are listed in the corresponding sections of this report, as applicable.

2.4 FACILITY PERMITS AND REGULATORY COMPLIANCE

Currently and historically, stormwater and wastewater from the Terminal has been managed in compliance with stormwater permits and a wastewater permit under NPDES requirements. A list of current and past permits at the terminal and the sampling requirements are provided in the following sections.

2.4.1 STORMWATER

Stormwater primarily infiltrates at the Terminal. In areas where stormwater runoff occurs, the stormwater is routed to the onsite wastewater treatment system (WWTS) or collected into the storm drain lines for discharge to the Willamette River. Stormwater from the former industrial areas of the terminal,

including the loading rack along the rail spur, the truck loading rack, the valve pit on the vessel dock, and the other areas where valves exist is routed to the WWTS. As described in the following section, the WWTS is under a permit from the COP (Metro) for discharge to the sanitary sewer along Time Oil road. Stormwater from the terminal entrance area and the low topographic area east of the rail spur and from the other areas of the Terminal during storm events is collected into the storm drain line for discharge into the Willamette River. The river outfall is under a NPDES permit as listed below.

The storm drain line runs east-west along the length of the Terminal about 160 ft north of the southern property boundary (Figures 2-1 and 2-2) to the river outfall. The storm drain was constructed before construction of the Terminal in 1943 and, therefore, backfill/construction details are not available. Internal inspection of a 600-ft section of the storm drain by remote video camera in April 2000 revealed that the line is a 15-inch diameter concrete pipe. The pipeline appears to be in good condition with few internal leaks. Several lateral lines to the main line were also observed in the Main Terminal Tank Farm area. One of the lateral lines was damaged during drilling of the horizontal well installed as part of the groundwater interim action (see Section 2.2.2.6). The lateral lines were subsequently isolated from the main line using internal patches.

Stormwater data collected between September 2001 and August 2002 at the catch basin closest to the river contained PCP concentrations ranging from 0.7 to 190 µg/L. Except for diesel-range petroleum hydrocarbons, petroleum compounds (gasoline, mineral spirits, kerosene, and lube oil) were not detected. Diesel-range petroleum hydrocarbons were detected twice at concentrations of 0.261 mg/L and 0.3 mg/L. These data and the groundwater flow pattern in the upper zone indicated that upper zone groundwater was likely infiltrating into the storm drain line. In October 2002, a groundwater intercept system was installed within the storm drain to capture groundwater between the two stormwater manholes closest to the river. Stormwater samples collected from the groundwater intercept system located in the catch basin closest to the river (SDM-1) continue to be analyzed as influent into the onsite WWTS on a quarterly basis; however, these concentrations represent groundwater captured by the intercept system that do not reach the river outfall. Samples are also collected from the river outfall, when exposed.

The current and historical stormwater permits are listed below.

Permit Type	File No.	Start Date	Outfalls	Parameters/Frequency
1200-T	109186	8/13/96	River	Oil & Grease; pH; total Phosphorus; COD; TOC; metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn); TSS
1200-Z	109186	11/6/97	River	Oil & Grease; total copper, lead, zinc; pH; TSS
1200-C (East Property only)	109737	11/16/01		Turbidity

2.4.2 WASTEWATER

Wastewater effluent samples are collected from the onsite WWTS in accordance with the permit requirements. Wastewater effluent concentrations typically meet the maximum allowable limit for PCP at 40 µg/L. Wastewater effluent is discharged to the COP sanitary sewer along Time Oil Rd, under the permit described below.

Permit Type	Permit Number	Start Date	Outfalls	Volumes	Parameters/ Frequency
POTW	400-121	2/15/96	Sanitary sewer	None specified	PCP, BETX, pH

Since groundwater recovery began as part of a groundwater interim action in fall 2000, wastewater effluent concentrations from the onsite WWTS have met the maximum allowable limit except for a single occurrence in July 2003, and sporadically throughout January through April 2004. Following notification to the COP and shutdown of the system following each upset, the rate of hydrogen peroxide solution introduced to the water was increased and the sampling frequency was increased to weekly until compliance within the allowable limit was consistently achieved. In March 2004, permission was obtained from the COP to modify the WWTS to improve the efficiency of the treatment system. The modifications included the use of a higher dose of hydrogen peroxide, implementation of a batch/mix tank prior to discharge, and aeration of the batch-mix tank to improve contact between the hydrogen peroxide and groundwater being treated. In response to the upset condition in April 2004, minor changes were made to the WWTS to improve the aeration of the water prior to discharge. Since April 2004, effluent concentrations indicate that the WWTS has been operating within the established permit limits. Documentation of the upset conditions was provided to the COP. Effluent concentrations for each sampling event are provided in the respective quarterly groundwater monitoring and interim action status reports.

3.0 PHYSICAL SETTING

This section provides a description of the physical setting of the Terminal, including topography, regional geology and hydrogeology, surface water features, climate, and meteorology.

3.1 TOPOGRAPHY

The Terminal covers approximately 52 acres within the floodplain of the Willamette River. The ground surface at the Terminal is relatively flat, with ground surface elevations in the Main Terminal Tank Farm area and the Bell Terminal Tank Farm area ranging from about 28 to 30 ft MSL. Along the western boundary of the Main Terminal Tank Farm area, the ground surface slopes abruptly downward to the Willamette River with topographic elevations ranging from 30 to 8 ft MSL. The East Property, which covers approximately 27 acres, is generally flat with a topographic elevation ranging from 24 to 27 ft MSL. The only significant variation from the generally flat topography is a large linear topographic mound in the northern portion of the East Property. The east-west trending mound is approximately 450 ft x 50 to 80 ft (L x W) with a topographic range from 24 to 38 ft MSL (Figure 2-1).

Historical aerial photographs indicate that prior to site development for the Terminal, similar to current conditions, the area was located in the river floodplain adjacent to the main channel with no apparent historical river channels or other river geomorphic features or surface water bodies that would impact current stormwater or groundwater flow. Historical aerial photographs showing the area in the late 1930s are shown on Figures 2-12 and 2-13. Historical aerial photographs for site conditions after Terminal development beginning in 1944 are provided in the Phase III RI work plan (Landau Associates 2001a).

Historically, ground surface topography at the Terminal has likely been affected by periodic dredging of the Willamette River. Dredge material from the river was likely used throughout the site as fill for land development. A review of historical aerial photographs indicates that the topographic mound on the East Property existed as early as 1940, but was likely created when the East Property was leveled. Based on a review of historical aerial photographs (Landau Associates 1997b), some changes to the west side of the mound have occurred through time due to scraping from excavation for borrow or regrading, but the majority of the mound has remained unchanged since the 1940s.

Except for the East Property, the main entrance road, and the areas around the office and loading racks, most of the site lacks vegetation and is unpaved. Vegetation on the East Property mainly consists of small scrub brush, blackberry bushes, and grasses. A small topographic depression (approximately 0.9 acre) was observed on the far northeastern corner of the property as part of a site survey conducted for the ecological risk assessment screening process (Landau Associates 1999a). Based on discussions with

Time Oil personnel, the depression formed in recent years (since 1995) when drainage from this area was blocked by construction and mounding of soil on the adjacent property to the east. In December 2000, the Oregon Department of State Lands (DSL) determined that the area was not a jurisdictional wetland on the basis that it appeared to be artificially created on fill material (Oregon DSL 2000).

The Terminal is located approximately at river mile 4 on the Willamette River. Along this reach, the river flows to the northwest and is about 1,500 ft wide.

3.2 REGIONAL GEOLOGY

This section provides a description of the regional geology in the area, as summarized from several published reports (Swanson et. al. 1993; McFarland and Morgan 1996; and Beeson et. al. 1991). Regional surficial geology and a regional geologic cross section based on these references are provided on Figures 3-1 and 3-2, respectively. The cross section includes a section through the Willamette River at a location that approximately bisects the Terminal. Local geology for the Terminal is described later in Section 6.1.

The Terminal is located within a structural basin referred to as the Portland Basin. The Portland Basin is defined as the area bounded by the Tualatin Mountains to the west, the Lewis River to the north, the foothills of the Cascade Range to the east, and the Clackamas River to the south. The Portland Basin is described as a northwest trending, pull-apart basin with northwest and northeast trending topographic lineations, faults, and folds. The Tualatin Mountains form a northwest-trending anticlinal ridge that is bounded along its eastern flank by the Portland Hills Fault (Figure 3-1). The Willamette River flows along the base of the eastern side of the Tualatin Mountains and the Terminal is located along the northeastern bank of the river. The Portland Basin is comprised of two distinct geologic associations: the basin-fill sediments of late-Miocene to Holocene age that are present throughout much of the basin, and sedimentary and volcanic bedrock units of Miocene to Pliocene age that underlie the basin-fill sediments and outcrop around the edge of the basin on the west, north, and east. These geologic formations are discussed in the following paragraphs, from oldest to youngest:

- **Columbia River Basalt Group (Tcr).** The bedrock units of the Portland Basin are comprised of the Miocene flood basalts identified as the Columbia River Basalt Group (CRBG) and the Skamania volcanics. The CRBG is the most extensive rock unit in the Portland Basin. This unit has been folded and faulted and forms the Tualatin Mountain uplands southwest of the site. The unit is assumed to underlie the approximate 1,800 ft thickness of the younger basin-fill sedimentary and volcanic rocks in the center of the basin and reaches a maximum thickness of more than 700 ft.
- **Sandy River Mudstone (Tsr) and Troutdale Formation (Tt).** Immediately overlying the bedrock units throughout much of the basin are the fine-grained sediments of the Sandy River Mudstone and the conglomerate and finer-grained deposits of the Troutdale Formation of

Miocene to Pliocene age. The Troutdale Formation overlays and interlays with the Sandy River Mudstone. These geologic formations were derived from sediment deposited by an ancestral Columbia River and local streams draining the Cascade Range as well as sediment derived from episodes of Pliocene high Cascade volcanism. The Troutdale Formation is the most extensive sedimentary unit in the Portland Basin.

- **Catastrophic Flood Deposits (Qff).** During the late Pleistocene, sediments were deposited by alluvial and catastrophic flood events in the Portland Basin as a result of repeated failures of glacial ice dams that impounded glacial Lake Missoula (Waitt 1985). These sediments fill the center of the basin and are thickest adjacent to the current locations of the Columbia and Willamette Rivers. Catastrophic flood deposits consist of a basaltic sand and gravel unit with varied amounts of cobbles and boulders and a finer stratified, sand, silt, and clay unit. The coarse unit is found near the present channel of the Columbia River and beneath Sauvie Island.
- **Alluvium (Qal).** Recent alluvial deposits exist along all major streams in the Portland Basin with the most extensive deposits along the Columbia and Willamette Rivers. The Columbia and Willamette River alluvium is primarily sand and silt, whereas the alluvium of the major tributaries is mostly cobble and gravel. Based on geologic logs for wells located near the Terminal, these deposits reach a maximum thickness of about 180 ft.

3.3 REGIONAL HYDROGEOLOGY

This section provides a description of the regional hydrogeology for the Terminal area, as summarized from published reports (McFarland and Morgan 1996 and Swanson et. al. 1993). Local hydrogeology at the Terminal is discussed in Section 6.2.

Eight major hydrogeologic units form the Portland Basin aquifer system (for a description of the Portland Basin, see Section 3.2). From oldest to youngest, they include: older rocks, sand and gravel aquifer, confining unit 2, the Troutdale Sandstone Aquifer, confining unit 1, the consolidated gravel aquifer, and the unconsolidated sedimentary aquifer. The eighth unit is the undifferentiated fine-grained sedimentary aquifer that exists in areas of the basin where the Troutdale Sandstone Aquifer and the Sand and Gravel Aquifer pinch out. These units can be grouped into three major subsystems, from oldest to youngest: older rocks, lower sedimentary, and upper sedimentary.

The older rock subsystem consists of Miocene and older volcanic and marine sedimentary rocks, generally of low permeability, that underlie and bound the basin-fill sediments in the Portland Basin. With the exception of the CRBG, these older rocks are poor aquifers and, in most areas, supply water in quantities adequate only for domestic use. These rocks are not a primary source of water in many parts of the basin. Where the older rocks are covered by basin-fill sediments, the older rocks are generally too deep to be used as a water supply under the current demand for water.

In most areas of the basin, the lower sedimentary subsystem is composed of interbedded consolidated silt, sand, and clay referred to as confining unit 1 and confining unit 2, and interlayered vitric

sandstone and quartzite-pebble-bearing basaltic conglomerate referred to as the Troutdale Sandstone Aquifer and the Sand and Gravel Aquifer. Toward the western edge of the basin (i.e., along the Willamette River), the Troutdale Sandstone Aquifer and Sand and Gravel Aquifer become finer grained and apparently pinch out. In these areas, confining unit 2 and confining unit 1 are not distinguishable from each other, and the lower sedimentary subsystem is mapped as undifferentiated fine-grained sediments. This undifferentiated fine-grained sediment unit is generally a poor water-bearing formation.

The upper sedimentary subsystem is composed of an unconsolidated sedimentary aquifer overlying the consolidated gravel and volcanic aquifer known as the Troutdale Gravel Aquifer. The unconsolidated sedimentary aquifer consists mainly of late Pleistocene catastrophic flood deposits (Qff) and recent Columbia River alluvium (Qal). The aquifer also includes water-bearing alluvial deposits that occur along smaller streams in the basin as well as floodplain deposits, and terrace deposits along major tributaries. Both the unconsolidated sedimentary aquifer and the Troutdale Gravel Aquifer are important and productive aquifers in the Portland Basin. In some parts of the basin, the unconsolidated sedimentary deposits are unsaturated; however, in other areas where the unconsolidated sedimentary aquifer consists of saturated alluvium or coarse-grained catastrophic flood deposits, the aquifer is considered the most productive aquifer in the Portland Basin, yielding up to 6,000 gallons per minute (gpm). Alluvium underlying the Columbia River and Willamette River floodplains consists primarily of clayey silt and sand that yields only 5 to 40 gpm. Coarser-grain catastrophic flood deposits can yield 100 to 200 gpm. The Troutdale Gravel Aquifer can yield from 50 to 2,000 gpm and many public supply, industrial, and domestic supply wells are completed in this aquifer.

Upland areas (i.e., Tualatin Mountains, Boring Hills, and western Cascade Range) have strong downward components of groundwater flow and are classified as recharge areas. Recharge to the aquifer system in the Portland Basin is primarily by infiltration of precipitation. However, within the urbanized parts of the basin, other sources contribute significant amounts of water locally to the aquifer. The two most significant urban sources of recharge are runoff from impervious surfaces to storm drains or dry wells, and effluent from onsite wastewater treatment or disposal systems (McFarland and Morgan 1996).

Lowland areas (narrow zones along the major streams of the Portland Basin) generally have strong upward components of groundwater flow and are classified as discharge areas. Groundwater discharge in the Portland Basin is primarily to springs, streams, and by pumping from wells. The largest component of groundwater discharge in the Portland Basin is to streams and rivers. Most streams and rivers in the basin are gaining (i.e., receiving groundwater), including the Columbia and Willamette Rivers.

3.4 SURFACE WATER FEATURES

The Willamette River bounds the Terminal to the west, but there are no surface water features (streams, lakes, etc.) on the Terminal property. Because of the relatively flat topographic ground surface, most surface water runoff likely infiltrates directly into the ground. Any runoff along the roads or old railroad beds likely flows toward the eastern side of the property.

3.5 CLIMATE AND METEOROLOGY

Climate and meteorology data discussed in this section were collected at the Portland International Airport (PDX) by the National Oceanic and Atmospheric Administration (NOAA; <http://www.ocs.orst.edu>). PDX is located approximately 9 miles east of the Terminal.

The Terminal is located approximately 50 miles from the Pacific Coast and midway between the low coastal range to the west and the higher Cascade range to the east. The climate in the project area is west coast marine, characterized by moderate rainfall. The Cascade mountain range forms a rain shadow from the coastal moisture to the arid and semiarid regions of eastern Oregon and Washington.

The average annual rainfall in Portland (November 1941 through September 2003) was about 36 inches. The average annual rainfall recorded during performance of the Phase III RI activities (2001 to 2003) was approximately 31 inches, and the average monthly rainfall during that time was 2.6 inches. Approximately 60 percent of the annual rainfall occurs during the winter months in the Portland area. Monthly average temperatures at PDX varied between about 35°F during the winter months to about 77°F during the summer months between 1941 and 2003.

Airflow is usually from the northwest in spring and summer and from the east-southeast in fall and winter. Average wind speed at PDX ranges from approximately 7 miles per hour (mph) in September and October through 10 mph in January. The annual mean windspeed is 8 mph.

4.0 LAND AND BENEFICIAL WATER USE EVALUATIONS

In accordance with OAR 340-122-080 (e) and (f), evaluations were conducted regarding current and reasonably anticipated future land use and regarding current and reasonably likely future beneficial water use at the Terminal and surrounding areas as part of the Phase II RI. The information collected during these evaluations is reported in the Phase II RI report (Landau Associates 2001b). Updated information obtained during the Phase III RI investigation has been incorporated into these evaluations. These evaluations will be used during subsequent studies to evaluate potential human and ecological exposures during the risk assessment and for selecting protective remedial options. The land and beneficial water use evaluations are summarized below.

4.1 LOCALITY OF THE FACILITY

The locality of the facility is defined by DEQ rule as “any point where a human or an ecological receptor contacts, or is reasonably likely to come into contact with, facility-related hazardous substances.” [OAR 340-122-115(34)]. Based on the soil and groundwater data collected for all phases of the remedial investigation (see Section 7.0 for nature and extent of contamination at the Terminal), the locality of the facility for the Terminal has been defined to include all of the Phase II and Phase III study areas, and the shoreline west of the Main Terminal Tank Farm area extending to the locations of the shoreline wells, as shown on Figure 4-1. Based on the shoreline groundwater data collected in November 2004, February 2005, and June 2005, the river has not been included in the locality of facility because, as discussed in Section 7.2.2.2, except for chromium and copper at a few shoreline wells during the November 2004 event sampling, facility-related groundwater contaminants are currently not reaching the Willamette River at concentrations above applicable screening level values. These data indicate that, even though there is a physical groundwater transport pathway from the upland areas of the terminal to the river, there is not a complete exposure pathway via groundwater at the Time Oil facility to the Willamette River. Therefore, groundwater discharge to the Willamette River is not a current or future beneficial use of the groundwater and the Willamette River is not within the locality of the Time Oil facility. Groundwater concentrations at the shoreline wells will be confirmed through a full year of groundwater monitoring. Also, Time Oil is planning to conduct a source control evaluation to determine whether there is a potential for constituents currently observed in wells within the Main Tank Farm Area to migrate to the river. Historical discharges to the river, including discharges via the storm drain will be addressed during the RI/FS for the Portland Harbor Superfund Project. Low level detections of PCP have been observed within the lower zone during the past year at the southern property boundary of the Terminal. The current groundwater interim action has effectively reversed downgradient groundwater flow near this area; however, because the

predominant groundwater flow direction from this area is to the west/southwest toward the river (Bridgewater Group 1998, 2001) and there is potential for migration of these concentrations to the river in the absence of the interim action, a small portion of the former PEO property south of the property boundary near the river is included in the locality of facility. Continued implementation of the groundwater interim action and implementation of the ISCO technique is expected to contain migration of and remediate groundwater impacted by, PCP originating from the former PCP formulation operations in the Phase II RI study area at the Terminal.

The Port of Portland T-5 property to the north of the Main Terminal Tank Farm area near the river is possibly down- or cross-gradient of the Terminal. Data collected from the new wells located at the north property boundary at the northern edge of the Main Terminal Tank Farm area during the fourth quarter 2004 event indicate that low levels of contaminants were detected in groundwater in this area. During June 2005, Time Oil attempted to sample two existing wells on the Port of Portland property located within 300 ft of the terminal's north property boundary. Both wells were dry. Sampling of these wells will be attempted again during the wet season, likely in late 2005 or early 2006. Until these sample results are collected and evaluated, the locality of facility boundary in this area is approximate, but assumed to extend to the north property boundary.

The property west of the Bell Terminal Tank Farm area has not been included in the locality of the facility because, although contaminants have been detected in soil and groundwater along the western property boundary, the data indicate that there appears to be a separate source for contamination in this area and also in the area on the former PEO property where product has been observed in well MW-4 on a consistent basis between 2001 and 2003 (the most recent data available) (Gradient 2003). Well MW-4 is located on the former PEO property more than 100 ft downgradient of the operating portion of the Bell Terminal Tank Farm area and about 50 ft from the western property boundary near the locations of the former diesel ASTs where significant petroleum releases are known to have occurred. No product has ever been observed within the Bell Terminal Tank Farm or within the Time Oil property boundary in this area. Even though it is likely that the plume originating from the central portion of the Bell Terminal commingles with the plume originating near the western property boundary, and that both of these plumes commingle with other contamination originating on the former PEO property where significant petroleum releases are known to have occurred, such as in the area where the former diesel ASTs were located near well MW-4, it is unlikely that the elevated concentrations observed near the western property boundary or on the former PEO property originate from the Bell Terminal. This conclusion is based on the significant increase in both soil and groundwater concentrations for petroleum constituents across the western property boundary and on the former PEO property. Therefore, the locality of facility boundary was extended to the western property boundary. Data from the adjacent property is not sufficient to identify

the point at which any plume moving from the Bell Terminal terminates within plumes originating at the PEO property in order to define the locality of the facility in this area with certainty.

4.2 LAND USE EVALUATION

As described in the Phase II RI report, a land use evaluation was conducted to identify the current and reasonably anticipated future land uses at the Terminal and surrounding properties immediately adjacent to Terminal. The land use evaluation was conducted in accordance with DEQ's guidance *Consideration of Land Use in Environmental Remedial Actions* (DEQ 1998b) and included a survey of adjacent properties, determination of current zoning and comprehensive plans, and identification of any regional trends relevant to land use and activities at the Terminal and the surrounding properties. The results of the land use evaluation identified the following historical and current land use information about the Terminal and at the adjacent properties:

- Current and historical land use for the Terminal and the adjacent properties is/was primarily industrial with some commercial use. Current adjacent property owners are shown on Figure 4-2.
- The East Property at the Terminal and the property owned by Jefferson Smurfit were also used by the military in the 1940s for military barracks and equipment storage.
- The current zoning of the Terminal property is heavy industrial (IH), which is also the comprehensive plan designation for the site property. This designation indicates that the likely reasonable future land use at the Terminal and surrounding properties is and will remain as heavy industrial.
- The Terminal area is within a River Industrial Greenway Zone overlay, within which "river-dependent and river-related industries which strengthen the economic vitality of Portland as a marine shipping and industrial harbor, while preserving and enhancing riparian habitat and providing public access where practical" are encouraged and promoted. Any changes to these designations would require rezoning and are unlikely based on the overall current and planned future use of land in the vicinity of the Terminal.

Zoning designations for the Terminal and the adjacent properties are presented on Figure 4-3.

4.3 BENEFICIAL WATER USE DETERMINATION

As described in the Phase II RI report, a beneficial water use determination was conducted by evaluating current, historical, and reasonably likely future water uses at the Terminal and adjacent properties. The evaluation was conducted in accordance with OAR 340-122-080 and DEQ's *Guidance for Conducting Beneficial Water Use Determinations at Environmental Cleanup Sites* (DEQ 1998c) and also considered the beneficial uses of the Willamette River, as designated by OAR 340-041, Table 340A.

The beneficial water use determination included: inventorying active and inactive private and public/municipal wells within a 1-mile radius of the Terminal, a survey of adjacent property owners and public water suppliers, a review of hydrogeologic documents, a survey of surface water bodies within the Terminal property boundaries or on adjacent properties, and a survey of water rights. Private and municipal wells and water rights identified within a one-mile radius of the Terminal are shown on Figures 4-4 and 4-5, respectively.

The results of the evaluation and the data collected during the Phase II and Phase III RI developed the following information about the current and likely future beneficial use of groundwater and surface water at the Terminal, at adjacent properties, and within a 1-mile radius of the Terminal:

- The current and likely future beneficial use of groundwater and surface water at the Terminal, at adjacent properties, and within a 1-mile radius of the Terminal is primarily industrial with limited use for irrigation of ornamental vegetation (i.e., not food crops) and does not include use as drinking water. Irrigation does not occur in direct proximity to the site and groundwater flow patterns are not impacted by pumping for irrigation; therefore, exposure to groundwater via irrigation is not a significant pathway. Groundwater at the Terminal is currently not used for any purposes; future groundwater use at the Terminal is expected to be limited to industrial use. However, there is insufficient yield of upper zone groundwater to facilitate its use for industrial purposes.
- A mitigation wetlands area, owned by the Port of Portland (Port), is located on the adjacent property to the north of the Terminal. Contaminants are present in soil and groundwater along the northern property boundary of the Main Terminal Tank Farm area. Time Oil attempted to sample two wells within 300 ft of the northern property boundary on the Port of Portland property in June, 2005, but the wells were dry. However, it is anticipated that these wetlands are upgradient of the Phase II and Phase III study areas and, therefore, do not provide an exposure pathway for contaminants in the soil and groundwater at the Terminal. Time Oil will attempt to sample these wells again during the wet season, likely in late 2005 or early 2006.
- The Willamette River borders the Terminal to the west. Contaminants are present in soil and groundwater along the western boundary of the Main Terminal Tank Farm area. Groundwater samples collected in Willamette River shoreline wells indicate that facility-related groundwater contaminants are not currently reaching the river at concentrations above applicable screening level values. Therefore, the river is not considered to be within the locality of the Time Oil facility, and groundwater discharge to the Willamette River is not a current or future beneficial use of groundwater within the defined locality of the facility (see Section 7.2.2.2). Historical impacts to in-water media in the Willamette River are being addressed by sampling and evaluations conducted for the Portland Harbor Superfund RI/FS.

Shallow groundwater at the Terminal is not considered suitable for beneficial use. For the upper zone, aquifer yield is low (less than 1 gpm) and the unit is discontinuous; therefore, the upper zone would not likely support long-term use for any purpose. For the lower zone, aquifer yield appears to be adequate for use (80 to 100 gpm based on aquifer test results); however, because of its interconnection with the upper zone and its heterogeneous nature, it is possible that this yield could not be sustained for long-term

use. For example, the lower zone groundwater recovery well, RW-2, has been pumping since fall 2000, with sustained yields of only about 8 gpm. Naturally occurring water quality appears to be suitable for both units. However, groundwater used for water supply throughout the Portland area has been typically derived from the Troutdale aquifers probably because of their significantly higher yield. Therefore, based on the significantly more favorable hydrogeologic characteristics of the Troutdale aquifers and historical groundwater use in this area, it is unlikely that the shallow water-bearing units defined at the Terminal would be used in the future for water supply. DEQ concurred with this determination in its NFA letter for the East Property (DEQ 2003a).

Continued implementation of the groundwater interim action and implementation of the ISCO technique is expected to contain migration of and remediate groundwater impacted by, PCP originating from the former PCP formulation operations in the Phase II RI study area at the Terminal.

5.0 PHASE III REMEDIAL INVESTIGATION SAMPLING

This section provides a description of the soil and groundwater investigations performed for the Phase III RI. As previously discussed in Section 2.0, the Phase III investigative work was conducted in three stages: a preliminary evaluation, an interim subsurface investigation, and the final stage of the Phase III RI. Activities associated with the preliminary evaluation and the interim subsurface investigation, and the results of these investigations, were previously documented in technical memoranda titled *Phase III Preliminary Evaluation* (Landau Associates 2002e), and *Phase III Interim Subsurface Investigation* (Landau Associates 2003d). These investigations are also described below to provide the sampling strategy and rationale used to identify sample locations for the final stage of the Phase III RI. The soil analytical data for the investigations performed during the final stage of the Phase III RI, the associated data validation report, and laboratory data packages are provided in Appendices E, F, and G of this report. Groundwater data collected for the fourth quarter 2003 groundwater monitoring event and for the first, second, third, and fourth quarter 2004 groundwater monitoring events are provided in quarterly reports (Landau Associates 2004a,b,c and 2005a,b). All analyses were performed by Specialty Analytical, Inc., a laboratory located in Tualatin, Oregon, except as noted in Section 5.2.5.1.

5.1 SOIL INVESTIGATION

This section describes the soil investigations conducted for the Phase III RI, including the preliminary evaluation, the interim subsurface investigation, and the final stage soil investigation.

5.1.1 PRELIMINARY EVALUATION

The Phase III RI soil investigation began in August 2001 with the preliminary evaluation (Landau Associates 2002e). As described in Section 2.2.3.1, the preliminary evaluation was performed to identify whether hazardous substances had been released to the environment within the Phase III study area; to evaluate the general distribution of the hazardous substances, if present, in soil; and to collect geologic, hydrogeologic, and chemical data in advance of a full-scale Phase III RI. During the preliminary evaluation, 17 potentially impacted areas were identified based on a review of historical aerial photographs and a review of historical operations at the Terminal. These areas are described in Table 2-5 and shown on Figure 2-6. During the preliminary evaluation, a biased (or focused) sampling approach was used to investigate the soil in these areas. In the smaller potentially impacted areas, the approach involved collecting three to four discrete soil samples, each representing a specific depth interval, from a central location within each area (referred to as biased sampling areas). For the larger potentially impacted areas (also referred to as biased sampling areas), the biased sampling approach involved

collecting three to four composite soil samples, each representing a specific depth interval from two subsample locations centrally located within the potentially impacted area. The depth intervals sampled within the potentially impacted areas included the upper 6 inches (0 to 0.5 ft BGS), 1 to 1.5 ft BGS, 5 to 5.5 ft BGS, and the capillary fringe. Samples from the upper 1.5 ft of soil were collected to determine whether contamination, if any, may be due to surface spills and, therefore, act as a potential source for groundwater contamination. A total of 9 surface soil samples (0 to 0.5 ft BGS) and 16 shallow soil samples (1 to 1.5 ft BGS) were collected and analyzed. Samples were collected from an intermediate depth interval (5 to 5.5 ft BGS) within the unsaturated zone at each location, but were archived at the laboratory. The samples were analyzed if contamination was detected in the surface soil sample and the results for the shallow soil sample (1 to 1.5 ft BGS) indicated an increasing concentration trend. Only one intermediate depth soil sample (5 to 5.5 ft BGS) was analyzed. This sample was collected from potentially impacted area B11. Soil samples were collected from the capillary fringe to determine the potential for groundwater contamination at each location. A total of 16 soil samples from the capillary fringe zone were collected from the potentially impacted areas, except area B13, and submitted for laboratory analysis. No soil samples were collected from area B13 during the preliminary evaluation because soil samples from this area were previously collected in conjunction with the removal of an underground storage tank (UST) formerly located within this area (GeoEngineers 2001).

Because the Phase III study area also includes several acres outside of these potentially impacted areas, an area-wide soil sampling approach (in conjunction with the biased sampling approach) was used to characterize soil during the preliminary evaluation. The area-wide approach divided the Phase III area into 27 200-ft by 200-ft grids, from which 2 to 3 soil sample locations were randomly selected and then composited within each grid. This approach resulted in the sampling of soil at locations throughout the entire 24-acre Phase III study area. A total of 78 area-wide soil samples were collected from the 27 random grid-based sampling locations and submitted for laboratory analysis. Of these 78 soil samples, 24 were collected from the surface (0 to 0.5 ft BGS), 27 were collected from the shallow subsurface (1 to 1.5 ft BGS), 1 was collected from an intermediate depth (5 to 5.5 ft BGS), and 27 were collected from the capillary fringe zone. The same rationale used for selecting sample depth intervals for the biased sampling approach was used for selecting sample depth intervals for the area-wide sampling approach. The area-wide random-based grid sampling locations and layouts are also shown on Figure 2-7.

In addition to the soil samples collected for the preliminary evaluation, five soil samples were collected by Schnitzer (SCH-56, SCH-58, SCH-59, SCH-61, and SCH-63) at locations on Time Oil property along the western property boundary, just west of the Bell Terminal Tank Farm area (Figure 2-7). The samples were collected within the capillary fringe (approximately 15 ft BGS). Landau Associates collected split soil samples for Time Oil at each location. Landau Associates also collected a

soil sample at location SCH-60, shown on Figure 2-7. The soil samples collected by Schnitzer were analyzed for diesel-, and gasoline-range petroleum hydrocarbons; PAHs, and VOCs. The analytical results are presented in Table 5-1 (GP-#). All of the split soil samples collected by Landau Associates were analyzed for diesel- and gasoline-range petroleum hydrocarbons. Four of the split soil samples were also analyzed for PAHs and VOCs. Results for the split soil samples are also shown in Table 5-1 (SCH-#). A comparison of the split soil sample results with the Schnitzer soil sample results indicates relatively high variability between the results (i.e., the relative percent difference between the diesel-range petroleum hydrocarbon results ranged from about 7.5 to 116 percent and the relative percent difference between the gasoline-range petroleum hydrocarbon results ranged from about 76.5 to 184 percent). These concentration differences are likely related to heterogeneities in the soil sample. The split soil sample results for gasoline-range petroleum hydrocarbons were significantly higher for the samples collected by Landau Associates than the samples collected by Schnitzer. VOCs were also more frequently detected in the samples collected by Landau Associates because of significantly lower laboratory reporting limits.

Based on the results from the preliminary evaluation, the following soil data gaps were identified:

- The extent of the confining unit separating the upper water-bearing and lower water-bearing zones was not well defined throughout the Phase III study area
- The source(s) of contamination detected in the Schnitzer soil samples and the split soil samples located in the area just west of the Bell Terminal Tank Farm area, but within the Time Oil property boundary (Figure 2-7) was not determined
- The horizontal extent of soil contamination within the capillary fringe in several of the grids (2, 3, 8, 9, 12, 13, 14, 21, 22, and 23) could not be well defined based on the composite soil sample results for that specific grid
- Potential source(s) of contamination in the capillary fringe soil in the Main Terminal Tank Farm area were not clearly identified
- The horizontal extent of surface soil contamination within the eastern portion of the Phase III study area (specifically grids 7, 10, 11, 15, 17, and 19) could not be well defined based on the composite soil sample results for specific grids.

Therefore, additional investigation work was planned to address these data gaps, as described in the following sections.

Sample collection methods for the preliminary evaluation soil investigation and the Schnitzer split soil samples are described in detail in the Phase III preliminary evaluation technical memorandum (Landau Associates 2002e). Laboratory analyses performed for each soil sample are summarized in Table 5-2.

5.1.2 INTERIM SUBSURFACE INVESTIGATION

To address the first three data gaps identified in Section 5.1.1 above, an interim subsurface investigation was performed [documented in the Phase III interim subsurface investigation technical memorandum (Landau Associates 2003d)]. The fourth and fifth data gaps were addressed by the final stage of the Phase III RI soil investigation, which followed the interim subsurface investigation. The primary goal of the interim subsurface investigation was to develop a better understanding of the subsurface geology to guide design and installation of additional monitoring wells and to complete the conceptual site model for the Terminal. To accomplish this goal, 27 subsurface explorations were performed throughout the Phase III study area using CPT. This technique provided a continuous stratigraphic description of the subsurface to about 60 ft BGS at 23 locations and to about 100 ft BGS at four locations. The CPT explorations were located in areas where subsurface information had not already been obtained (primarily the Main Terminal Tank Farm area and the Bell Terminal Tank Farm area). The CPT exploration locations are shown on Figure 2-11.

The other goals of the interim subsurface investigation included identification of the source of the soil and groundwater contamination in the area just west of the Bell Terminal Tank Farm area and further definition of the area of contaminated capillary fringe soil within the preliminary evaluation sampling grids selected for investigation at this time. Grids that were not further investigated during the interim subsurface investigation would be investigated during the final stage of Phase III soil investigation. To accomplish these goals, 49 soil samples were collected at depth intervals of 0 to 0.5 ft BGS, 1 to 1.5 ft BGS, 5 to 5.5 ft BGS, and within the capillary fringe zone from 10 direct-push borings in the Bell Terminal Tank Farm area, and 5 soil samples were collected from the capillary fringe zone at five preliminary evaluation random subsample locations (G2-1, G2-2, G12-2, G13-1, and G21-2). The depth intervals sampled during the direct-push explorations in the Bell Terminal Tank Farm area were the same as those collected during the preliminary evaluation. The same rationale for selecting the sample depth intervals used during the preliminary evaluation was applied during the interim subsurface investigation. However, samples collected from the 5 to 5.5 ft depth interval during the interim subsurface investigation were analyzed immediately by the laboratory instead of being placed on hold. The boring locations for the 49 soil samples collected in the Bell Terminal Tank Farm area were concentrated along the east-west trending pipeline located in the center of the Bell Terminal Tank Farm area. This area was targeted because this pipeline was formerly used to convey petroleum products, and leaks or breaks along the pipeline, if any, could have resulted in contamination of the underlying soil. Therefore, the pipeline was considered a potential contaminant source. Also, diesel-range and gasoline-range petroleum hydrocarbons were detected in the groundwater sample collected at the temporary well point (GW23-1) located along this pipeline (Figure 2-11) during the preliminary evaluation. The locations of the other

five soil samples were selected with the intent of being able to eliminate or better define the specific area(s) where soil contamination exists in grids 2, 12, 13, and 21.

The results of the interim subsurface investigation confirmed that, in the western portion of the Main Terminal, the confining unit becomes thinner and eventually becomes discontinuous layers of silt and no longer acts a confining unit. The investigation also indicated that, although diesel-range and motor oil-range petroleum hydrocarbons are present in the surface or shallow soil in the Bell Terminal Tank Farm area, surface or shallow soil contamination does not appear to be widespread nor does the contamination appear to be present at elevated concentrations. The investigation did, however, indicate that in the area sampled, the higher concentrations of diesel-range and gasoline-range petroleum hydrocarbons are present in the capillary fringe soil.

Following the interim subsurface investigation, the following soil data gaps remained:

- The horizontal extent of soil contamination within the capillary fringe in grids (3, 8, 9, 14, 22, and 23) was not yet well defined
- Potential source area(s) of contamination in the capillary fringe soil in the Main Terminal Tank Farm area remained to be identified
- The horizontal extent of surface soil contamination within the eastern portion of the Phase III study area (specifically grids 7, 10, 11, 15, 17, and 19) had not yet been well defined.

The CPT exploration techniques and sample collection methods for the interim subsurface investigation are described in detail in the Phase III interim subsurface investigation technical memorandum (Landau Associates 2003d)]. Laboratory analyses performed for each soil sample are summarized in Table 5-2.

5.1.3 FINAL STAGE

The final stage of the Phase III RI was performed during September and October 2003 and during October and November 2004. For this investigation, soil samples were collected from the following locations:

- Thirty-three soil borings drilled for Phase III monitoring wells (LW-19S, LW-20S, LW-20D, LW-21S, LW-22D, LW-23D, LW-24D, LW-25D, LW-26D, LW-27S, LW-27D, LW-28S, LW-29S, LW-29D, LW-30S, LW-30D, LW-31S, LW-32S, LW-32D, LW-33S, LW-34S, LW-35D, LW-36D, LW-37D, LW-38D, LW-39D, LW-40S, LW-40D, LW-41S, LW-42S, LW-43-S, LW-44S, and LW-45D; these are described further in Section 5.2)
- Five soil borings (HB-01 through HB-05) drilled near three sets of parallel conveyance/manifold pipes that trend northeast-southwest through the Main Terminal Tank Farm area
- Fifteen hand-dug holes located in the eastern portion of the Phase III study area (identified as sample locations G7-03, G7-04, G7-05, G10-4, G10-5, G11-3, G15-4, G15-5, G15-6, G17-4,

G17-5, G17-6, G19-3, G19-4, and G19-5); location G10-4 was moved approximately 75 ft directly south from its original planned location due to road base material at the originally planned location

- Two hand-dug holes located in the southeast portion of the Bell Terminal Tank Farm area (identified as sample locations G27-4 and G27-5).

The Phase III soil sample locations are shown on Figure 2-7. The soil samples collected during this investigation were collected with the purpose of filling data gaps identified based on results of the interim subsurface investigation described in Section 5.1.2 above. Soil sample collection procedures were conducted in accordance with the Phase III work plan (Landau Associates 2001a). Logs for each soil boring or well borehole are provided in Appendix A of this report.

The purpose of the hand-dug soil borings (HB-01 through HB-05) was to evaluate whether the three sets of conveyance/manifold pipes that trend northeast-southwest through the Main Terminal Tank Farm area may have been a source of soil contamination in the Main Terminal Tank Farm area and to better define the extent of contaminated soil in preliminary evaluation sampling grids 8 and 9. Soil sample results from these borings will be used to evaluate the potential for surface spills along this pipeline due to potential leaks or breaks while the pipelines were in operation. The borings were drilled using direct-push hand-probe equipment operated by Cascade Drilling, Inc. (Portland, Oregon). Using the same sample depth interval rationale as used for the preliminary evaluation and the interim subsurface investigation, soil samples were collected for chemical analyses at the hand-probe borings at the following depth intervals: 1 to 1.5 ft BGS, 5 to 5.5 ft BGS, and within the capillary fringe. No samples were collected from the 0 to 0.5 ft depth interval, as recommended in the interim subsurface investigation technical memorandum, because during drilling it was observed that at least 0.5 ft of imported sand covered the area where these borings were drilled. Soil samples from 0.5 ft to 1.0 ft were also collected at each of these soil boring locations. Samples from this depth interval were archived pending results of samples collected from the lower depth intervals. Each of the samples collected were analyzed for diesel-range and gasoline-range petroleum hydrocarbons (Methods NWTPH-Dx and NWTPH-Gx); BTEX, MTBE, 1,2-dibromoethane (EDB), 1,2-dichloroethane (EDC), 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, isopropylbenzene and n-propylbenzene (EPA Method 8260); PAHs (EPA method 8270); and lead and zinc (EPA Method 6010). Laboratory analyses performed for each soil sample collected from the hand-probe borings are also summarized in Table 5-2.

The Phase III monitoring well soil samples were collected continuously for lithologic purposes and to check for the presence or absence of non-aqueous phase liquid (NAPL). At paired monitoring well locations, the boring for the lower zone monitoring well was drilled and installed first, followed by the boring for the upper zone monitoring well. To verify the upper zone well depth and screened interval,

soil samples were collected during drilling of the upper zone well near the estimated top of the confining unit based on the lithologic information collected during drilling of the boring for the lower zone well. At monitoring well pair LW-27S/27D, the upper zone monitoring well was installed first, because the thickness or presence of the confining unit along the presumed confining unit boundary was unknown and also due to the presence of NAPL within the soil samples. At monitoring well pair LW-40S/40D, the upper zone monitoring well was installed first, because the Oregon Water Resources Department (OWRD) required that the step-down procedure used for drilling the lower zone well be performed using slightly larger diameter augers, which required mobilization of a larger drill rig and delay of well installation. Soil samples for chemical analysis were collected from within the capillary fringe at each monitoring well soil boring, except at the well pairs where soil was only collected from one of the well borings. The capillary fringe was encountered at depths ranging between 12.5 to 16 ft BGS at most locations, except at wells LW-40S, LW-40D, and LW-45D. These wells are located on an approximate 5-ft high berm along the northern perimeter of the Main Terminal Tank Farm area, therefore, the capillary fringe at these locations was encountered at a depth of 21 ft BGS. Soil samples were also collected from the 0 to 0.5 ft depth interval, the 1 to 1.5 ft depth interval, and the 5 to 5.5 ft depth interval at soil borings for monitoring wells LW-41S, LW-42S, LW-43S, and LW-44S located in the Bell Terminal Tank Farm area. All of the soil samples from the 0 to 0.5 ft and the 1 to 1.5 ft depth intervals were submitted for laboratory analysis. The samples collected from the 5 to 5.5 ft depth intervals were archived and analyzed only if results for the samples from the upper most depth intervals indicated an increasing concentration trend with depth. Only one archived sample from this depth interval (collected at boring LW-42S) was analyzed. Laboratory analyses performed for each soil sample collected from monitoring wells soil borings are summarized in Table 5-2.

Shallow soil samples were collected from hand-dug holes within the eastern portion of the Phase III study area and the southeast portion of the Bell Terminal Tank Farm area to better define the specific area(s) where surface or shallow soil contamination exists within a preliminary evaluation sampling grid. For example, elevated concentrations of PAHs were detected in the composite surface soil sample at Grid 7. However, one of the subsample locations was near a historical roadway. To determine if the elevated concentration of PAHs could be attributed to the oiling of historical roadways, a discrete surface soil sample (G07-05) was collected adjacent to one of the previous subsample locations (G07-02). Also, to more adequately characterize the soil within the grid, discrete surface soil samples were collected at two other locations within the grid (G07-03 and G07-04). At each location, samples were collected from the 0 to 0.5 ft BGS depth interval. Samples were also collected from the 0.5 to 1.0 ft and 1.0 to 1.5 ft depth intervals and archived at the laboratory for potential analyses, depending on the results for the surface

sample location. The samples were collected from holes dug using hand-held implements (shovels, picks, post-hole diggers, etc.).

Recommendations for analyses to be performed for each soil sample were included in the interim subsurface investigation technical memorandum and were based on constituents previously detected in the associated preliminary evaluation grid sample. The analyses performed for each sample are as follows:

- At locations G7-03, G7-04, G7-05, G11-3, G15-4, G15-5, G15-6, G17-4, G17-5, G17-6, G19-3, G19-4, and G19-5, the samples collected from the 0 to 0.5 ft depth interval were analyzed for PAHs, lead, and zinc. Samples collected from the 0.5 to 1.0 ft and 1.0 to 1.5 ft depth intervals were archived.
- At locations G10-4 and G10-5, the 0 to 0.5 ft depth interval samples were analyzed for PAHs, lead, and zinc analyses. The samples collected from the 1.0 to 1.5 ft depth interval were analyzed for PAHs only. No samples were collected from the 0.5 to 1.0 ft depth interval.
- At locations G27-4 and G27-5, the soil samples were only collected from the 0 to 0.5 ft interval and analyzed only for PAHs.

Laboratory analyses performed for each soil sample are also summarized in Table 5-2.

5.2 GROUNDWATER INVESTIGATION

This section describes the groundwater investigations conducted for the Phase III RI, including installation and groundwater sampling of temporary well points and permanent monitoring wells, and measurement of groundwater levels.

5.2.1 TEMPORARY WELL POINTS

The Phase III RI groundwater investigation included installation and sampling of 23 temporary well points during the preliminary evaluation, collecting split groundwater samples at 5 temporary well points, installation and sampling of 10 temporary well points and estimating static groundwater levels at 24 CPT locations during the interim subsurface investigation, installation and development of 33 permanent monitoring wells in the Phase III study area, and collection of groundwater samples from 46 permanent monitoring wells. The Phase III RI temporary well locations, Phase III RI permanent monitoring well locations, and Phase II monitoring well locations are shown on Figure 2-11. Prior to the Phase III RI groundwater investigation approximately 50 monitoring wells already existed in portions of the Phase III study area. None of these existing wells, however, were located in the Bell Terminal Tank Farm area.

The purpose of collecting groundwater samples from temporary well points during the preliminary evaluation was to identify locations within the Phase III study area where contaminated groundwater is present and to facilitate the placement of the additional permanent monitoring wells such that long-term monitoring for contaminant migration can be performed. To achieve this goal, the temporary well points were located in areas of the Main Terminal where monitoring wells did not already exist and, because no monitoring wells were present in the Bell Terminal Tank Farm area, temporary well points were spatially distributed throughout that area. In some cases, the temporary well points in the Main Terminal Tank Farm area were purposely located adjacent to or downgradient from potentially impacted areas identified in Table 2-5. For example, GW2-2 and GW8-1 were located adjacent to or downgradient from potentially impacted area B12. This was the approximate area potentially impacted by a diesel spill that occurred in 1979 as a result of a split in tank 29508. Temporary well point GW4-1 was located downgradient of potentially impacted area B4 where three USTs and the associated dispensers were formerly located. Temporary well point GW17-1 was located downgradient of the potentially impacted area B7 where a railroad car loading rack was formerly located.

In addition to the 27 well points installed as part of the preliminary evaluation, 7 temporary well points were installed by Schnitzer at locations located on Time Oil property just west of the Bell Terminal Tank Farm area. These locations (SCH-56, SCH-57, SCH-59, SCH-60, SCH-61, SCH-62, and SCH-63) are shown on Figure 2-7. Schnitzer collected groundwater samples from each of the temporary well points using a peristaltic pump. The groundwater samples collected by Schnitzer were analyzed for diesel-, lube oil-, and gasoline-range petroleum hydrocarbons, SVOCs, and VOCs. The analytical results are presented in Table 5-3. Landau Associates collected split groundwater samples at five of the locations for Time Oil. All of the split groundwater samples collected by Landau Associates were analyzed for diesel- and lube oil-range petroleum hydrocarbons and, except for one sample, were analyzed for gasoline-range petroleum hydrocarbons. Two of the split groundwater samples were also analyzed for VOCs. The results for the split groundwater samples are also shown in Table 5-3. A comparison of the split groundwater sample results with the Schnitzer groundwater sample results indicates some variability between the results, as discussed previously (i.e., the relative percent difference between the diesel-range petroleum hydrocarbon results ranged from about 40 to 147 percent). The variability in sample results is likely due to the fact that these samples were collected directly from a borehole, instead of a monitoring well, which resulted in turbid samples. Suspended material in the groundwater sample may cause variability in the results due to contaminants adsorbed to the suspended material and, therefore, a reflection of the heterogeneity in the concentrations in the suspended soil.

During the interim subsurface investigation, discrete groundwater samples were collected from 10 temporary well points located along the east-west trending pipeline located in the center of the Bell

Terminal Tank Farm area. As mentioned in Section 5.1.2, the pipeline was formerly used to convey petroleum products. The groundwater samples were collected to determine the impacts on groundwater, if any, due to this pipeline.

5.2.2 PERMANENT MONITORING WELLS

Nineteen monitoring wells were installed in the Main Terminal Tank Farm area as part of the Phase III RI. These included:

- Two wells screened in the upper zone (LW-19S and LW-21S)
- Seven wells, located in the western portion of the Main Terminal where the confining unit is discontinuous or absent, and screened across the first water-bearing zone (LW-22D, LW-23D, LW-24D, LW-25D, LW-26D, LW-35D, and LW-45D)
- Four wells installed along the Willamette River shoreline where the confining unit is discontinuous or absent, and screened across the first water-bearing zone (LW-36D, LW-37D, LW-38D, and LW-39D)
- Three well pairs each with a well screened in the lower and upper zones (LW-20S/20D, LW-27S/27D, and LW-40S/40D).

Twelve of the wells in the Main Terminal Tank Farm area were installed in September and October 2003. Seven of the wells, including those located along the Willamette River shoreline, were installed in November 2004. The placement of wells adjacent to the northern property boundary (LW-40S, LW-40D, and LW-45D) and along the western portion of the Main Terminal Tank Farm area (LW-22D, LW-23D, LW-24D, LW-25D, and LW-35D) was to characterize groundwater at the perimeter of the Main Terminal Tank Farm area. Monitoring wells were not installed along the southern tank farm perimeter during the Phase III RI because several upper zone and lower zone wells had been previously installed in this area as part of the Phase II RI. Monitoring wells were also installed in the central portion of the Main Terminal Tank Farm area (LW-19S, LW-20S, LW-20D, LW-21S, LW-26D, LW-27S, LW-27D) because analytical results for samples collected from the temporary well points indicated the presence of diesel-range and gasoline-range petroleum hydrocarbons and related constituents in the groundwater below the Main Terminal Tank Farm area. Well LW-19S was originally planned to be a lower zone monitoring well near the edge of the confining unit in the northern portion of the Main Terminal Tank Farm area, based on the geologic conceptual model reported in the Phase III subsurface investigation technical memorandum. During drilling at this monitoring location, the confining unit was encountered at 19 ft BGS. Instead of installing a lower zone well at this location, an upper zone well was installed to characterize hydrogeologic conditions in the upper zone near the estimated boundary of the

confining unit. An additional monitoring well, LW-35D, was subsequently installed to the northwest of LW-19S to characterize the lower zone in this portion of the Terminal.

Sixteen monitoring wells were installed in the Bell Terminal Tank Farm area as part of the Phase III RI, including:

- Eight wells screened in the upper zone (LW-28S, LW-31S, LW-33S, and LW-34S, LW-41S, LW-42S, LW-43S, and LW-44S)
- Three well pairs each with a well screened in the lower and upper zones (LW-32S/32D, LW-29S/29D, and LW-30S/30D).

Twelve of the wells in the Bell Terminal Tank Farm area were installed in September and October 2003. Four of the wells, LW-41S, LW-42S, LW-43S, and LW-44S were installed in November 2004. The locations of the initial 12 wells were selected to provide hydrogeologic information necessary to estimate groundwater flow patterns in the Bell Terminal Tank Farm area and to monitor for contaminants in groundwater. Initially, four wells (two sets of nested wells: LW-29S/29D and LW-30S/30D) were installed along the western property boundary of the Bell Terminal Tank Farm area to determine if contaminants previously detected in groundwater from temporary well point locations (SCH-61 and SCH-63B) are migrating from the property or onto the property in this area. Two additional upper zone monitoring wells (LW-41S and LW-42S) were later installed for additional information to better evaluate the potential migration of contaminants along this property boundary. Initially, one set of nested wells (LW-32S/32D) was installed along the east-west trending pipeline located in the center of the Bell Terminal Tank Farm area where diesel-range and gasoline-range petroleum hydrocarbons and related constituents were detected in groundwater samples collected from five temporary well points (BT-03, BT-04, BT-06, BT-08, and BT-09). A third monitoring well, LW-44S, was later installed in this area, as requested by DEQ. One upper zone well (LW-43S) was installed at a location between the western property boundary and the area along the pipeline in the central portion of the Bell Terminal to determine whether the concentrations observed in these two areas were contiguous. Monitoring well LW-33S was installed along the southern perimeter of the Bell Terminal Tank Farm area to monitor the migration of contaminants, if any, between the Bell Terminal Tank Farm area and the adjacent property to the south. Monitoring well LW-34S was installed in a location just downgradient of the former loading rack area (identified as biased sampling area B14 on Figure 2-11) to determine if former loading rack activities may have had an impact on groundwater. One well, LW-28S, was installed along the northern perimeter of the Bell Terminal Tank Farm area because the location was upgradient of any contamination detected during previous investigations.

Soil borings for each of the monitoring wells were drilled using a hollow-stem auger rig. Boreholes were drilled and the wells were constructed and installed in accordance with the Oregon

Administrative Rules (OAR) 690-240 and applicable DEQ guidance (DEQ 1992). Borehole drilling and monitoring well construction and installation were performed by Cascade Drilling, Inc., a licensed well driller in the state of Oregon. A summary of drilling and installation activities for the upper and lower zones monitoring wells are discussed in the following sections.

5.2.2.1 Upper Zone Monitoring Wells

The well borings for the upper zone monitoring wells extended to the top of the confining unit, or a maximum of 1 ft into the confining unit. The completed depths for the soil borings ranged from 14.0 ft to 24.0 ft BGS. The depth of the confining unit at each location was determined based on field observations of the soil samples collected continuously to the full depth of each boring (see Section 5.1).

Upper zone monitoring wells were constructed of flush-threaded 2-inch Schedule 40 PVC casing with PVC machine-slotted screen (0.020-inch). The well screens and casing were pre-cleaned using a hot pressure washer. Screen and well casing material were inspected for damage prior to installation. The screened interval for each well extended from near the top of the confining unit to a depth above or near the expected seasonal high water level. This required using a 10-ft well screen at all but four monitoring wells. Monitoring wells LW-20S, LW-28S, and LW-33S were constructed with 5-ft screens because of the thin saturated thickness of the upper zone at these locations. Monitoring well LW-27S was constructed with a 15-ft screen because of the thinning and overall greater depth of the confining unit at this location, which is near the western extent of the confining unit in the Main Terminal Tank Farm area.

Following placement of the well screen and casing in the borehole, a filter pack was installed around each well screen. The filter pack extended from the bottom of the end cap to a minimum of 2 ft above the screen. Filter pack material consisted of commercially prepared, presized, prewashed No. 10-20 Colorado silica sand. The filter pack was carefully placed down the annulus between the well casing and the auger flights or temporary steel casing, as the auger or casing was slowly withdrawn. During filter pack placement, the distribution and depth of the filter pack was monitored with a weighted tape. A 1-ft layer of commercially prepared fine sand (No. 20-40 Colorado silica sand) was placed above the filter pack.

A bentonite chip seal of at least 2-ft thick was placed above the sand pack to about 1 ft below the ground surface. The surface of each well was completed with a concrete seal and surface pad extending from the top of the bentonite seal to slightly above the surrounding ground surface. Locking steel monuments (aboveground and flush-mount) were cemented in place at the surface to a depth of about 3 ft BGS. At locations where aboveground monuments were installed, a 2x2-ft concrete pad with a minimum thickness of 4 inches was constructed around each well at the ground surface to divert rainfall away from the well casing and three bollards were cemented in place around each wellhead in accordance with OAR

690-240-110. Flush-mounted monuments were installed at locations where vehicular traffic precludes the use of an aboveground monument. The well construction details are presented with the boring logs in Appendix A of this report.

5.2.2.2 Lower Zone Monitoring Wells

Well borings for the lower zone monitoring wells extended at least 10 ft into the lower zone, except for wells installed along the shoreline of the Willamette River (beach wells). The beach wells were installed within the first encountered water-bearing unit (the upper zone does not exist in this area), but did not extend into a silt layer encountered at three of the wells (LW-36D, -37D, -39D) at about 10 to 12 ft BGS. Completed depths for the beach wells ranged from 10.2 to 16.5 ft BGS. (Note that ground surface elevations for these wells are approximately 20 ft lower than the wells installed along the riverbank and in the Main Terminal Tank Farm area.) Completed depths for the remainder of the lower zone wells ranged from 29.5 ft BGS to 44.5 ft BGS. Identification of the lower zone at each well location was determined based on field observations of soil samples collected continuously throughout the full depth of each boring (see Section 5.1).

As described in the Phase III work plan (Landau Associates 2001a), a step-down drilling procedure was used for the monitoring wells screened in the lower zone where the confining unit was encountered. This procedure was used to minimize the potential for carry-down of contaminants from the upper zone to the lower zone during drilling. The step-down procedure consisted of drilling to and partially into the top of the confining unit between the two groundwater zones using a 15-inch outside-diameter drill auger. The auger size was then reduced (stepped down) to a 9-inch outside-diameter auger for drilling through the confining unit and into the lower zone. Before drilling the 9-inch-diameter auger through the confining unit, approximately 5 ft of bentonite chips were placed in the borehole and allowed to hydrate for at least one hour. After hydration, the 9-inch auger was lowered into the borehole and drilling was continued through the silt layer to the desired total depth. The step-down procedure was used during drilling of soil boreholes for wells LW-20D, LW-26D, LW-27D, LW-29D, LW-30D, LW-32D, and LW-40D. No step-down procedure was used for drilling boreholes for wells LW-22D, LW-23D, LW-24D, LW-25D, LW-35D, and LW-45D located within the Main Terminal Tank Farm area because the confining unit was not encountered or the thickness of the silt layer was less than 0.5 ft at these locations.

Lower zone monitoring wells were constructed of flush-threaded 2-inch Schedule 40 PVC casing with PVC machine-slotted screen (0.020-inch). The well screens and casing were pre-cleaned using a hot water pressure wash. Screen and well casing material were inspected for damage prior to installation. All but two of the lower zone monitoring wells installed at locations where the confining unit is present were

screened over a 10-ft interval that extended from the base of the confining unit into the lower zone. Monitoring wells LW-26D and LW-40D were screened over a 5-ft interval to allow for the screened portion of the well to be placed in predominantly sand where silt layers existed. At wells located beyond the extent of the confining unit, a 15-ft screen interval was used to screen across the expected seasonal high and low water elevations, except for the beach wells. For these wells, the screened interval ranged from 4 to 10 ft. As discussed above, a silt layer was encountered at about 10 to 12 ft BGS in three of the wells located on the shoreline of the Willamette River; therefore, the screen length and screen position were chosen so that the base of the well was installed above the silt layer. The screen interval was installed to extend 2 to 3 ft above the water level at the time of drilling for account for seasonal fluctuations.

Following placement of the well screen and casing in the borehole, a filter pack and bentonite seal, concrete seal and surface pad, and locking steel monument (aboveground or flush-mount) were installed using the same procedures described for the upper zone monitoring wells. The well construction details are presented with the boring logs in Appendix A.

5.2.3 WELL DEVELOPMENT

Each monitoring well was developed after the final grout (or bentonite chips) had been allowed to hydrate in the well annulus for a minimum of 24 hours. Development was accomplished using a centrifugal pump and the procedures described in the Phase III work plan. Development continued until at least 5 to 10 casing volumes were removed and turbidity of the discharged water was visibly low. Groundwater sampling did not occur at the wells less than 48 hours following development.

5.2.4 WATER LEVEL MEASUREMENTS

Prior to groundwater sampling, groundwater levels were measured and the presence of NAPL was checked at each monitoring well. Groundwater level measurements were taken from a marked survey point or at the top of the PVC well casing or from the north side of the top of the PVC well casing and recorded to the nearest 0.01 ft. Measurements in the Willamette River were taken from a surveyed PK nail with washer located on the south side of the dock.

5.2.5 GROUNDWATER SAMPLING

Groundwater samples were collected from the scheduled monitoring wells during the quarterly events, except where the wells contained product or when the wells were dry. A record of conditions at

the time of sampling is provided in Section 6.0 Table 6-1 and in Section 7.0 Table 7-3. Groundwater monitoring locations are shown on Figure 2-1.

Analytical results and groundwater sampling procedures for the combined Phase II/III quarterly sampling events are provided in the respective quarterly reports (Landau Associates 2004a,b,c and 2005 a,b) and are evaluated in Section 7.0 of this report.

5.2.5.1 Groundwater Chemical Analyses

Groundwater samples collected during the fourth quarter 2004 were analyzed for the following constituents: SVOCs (EPA Method 8270); VOCs (EPA Method 8260), including methyl tert-butyl ether (MTBE) at well LW-7S; PCP (EPA Method 8270 SIM); six priority pollutant metals (arsenic, chromium, copper, lead, nickel, and zinc; EPA Methods 6010/7000 series); total dissolved solids (TDS; EPA Method 160.1); chloride (EPA Method 325.2); gasoline-range TPH (NWTPH-G); diesel-range and motor oil-range TPH (NWTPH-Dx), and field parameters (pH, conductivity, dissolved oxygen, turbidity, and temperature). Additionally, select wells were sampled for ferrous iron (EPA Method SM3500); selenium (EPA Method 6010); benzene, ethylbenzene, toluene, and xylenes (BETX); and dioxins and furans (EPA Method SW8290) for monitoring of the ISCO events. PCP analyses using EPA Method 8270 SIM was also conducted on samples where PCP was not detected above the reporting limit using EPA Method 8270. The laboratory analyses were conducted by Specialty Analytical Inc., located in Tualatin, Oregon, except as follows: laboratory analyses prior to the first quarter 2004 event and the ferrous iron analysis were conducted by Analytical Resources, Inc. (ARI) located in Tukwila, Washington; dioxin/furan analyses were conducted by Columbia Analytical, Inc. in Houston, Texas.

5.2.6 SURVEY

Soil sampling locations and temporary well point sampling locations for the Phase III investigations were surveyed by using a global positioning system instrument (GPS), or by taped measurements. Permanent monitoring wells were surveyed using a licensed surveyor (ZTec Engineers of Portland, Oregon). All surveying conducted by the licensed surveyor and/or GPS included the collection of horizontal coordinates (x,y) using the Oregon State Plane coordinate system (NAD 86), and ground surface elevations using MSL datum. Additionally, the elevation of the top of PVC casing and the top of the protective well monument at each of the permanent monitoring wells was surveyed by the licensed surveyor and used as water level measurement reference points. Surveyed reference elevations for each Phase III monitoring well are provided in Table B-1.

5.2.7 RESIDUAL WASTE MANAGEMENT

Investigation-derived wastes including soil, purge water, and decontamination water generated during all activities for the Phase III RI conducted to date were disposed or treated as follows:

- **Soil:** Soil cuttings generated from direct-push borings drilled during the Phase III preliminary evaluation and interim subsurface investigation were disposed at the Swan Hills incineration and disposal facility in Alberta, Canada with the soil stockpile and PCP mixing area soil. Soil generated from the Phase III RI hand probe borings and soil cuttings from the installation of the Phase III monitoring wells was temporarily stockpiled in two lined and covered areas onsite (south-southwest of tank 80014 in the Main Terminal Tank Farm area and southeast of tank 80009 in the Bell Terminal Tank Farm area). The temporary stockpiles were removed on February 19, 2004 and February 14, 2005 and thermally treated and disposed at TPS Technologies in Tacoma, Washington. Disposal documentation is on file at the environmental offices of Time Oil in Seattle, Washington.
- **Purge and Decontamination Water:** Water generated during the sampling of temporary well points, development and sampling of the permanent monitoring wells, and the decontamination of equipment used during the Phase III investigation was transferred directly to the onsite wastewater treatment system for treatment.

5.3 QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES

The quality assurance and quality control (QA/QC) procedures that were used during the investigations for the Phase III RI were conducted in accordance with the Quality Assurance Project Plan (QAPP; Landau Associates 2001a; Appendix C). These QA/QC procedures included collection and analysis of samples that provided a consistent and predetermined level of precision and accuracy, completeness, representativeness, and comparability/compliance with project data quality objectives; specific QA/QC procedures for sample collection and handling; analytical protocols for analytical laboratories; the use of QC samples; and data validation procedures. As a result of the QA/QC procedures, the Phase III RI data were determined to be adequate for risk assessment evaluations and for future decisions on selection of a remedy for soil and groundwater at the Terminal.

5.4 DATA VALIDATION

The results of all chemical analyses underwent a data quality evaluation or data validation. The data quality evaluations were performed in accordance with the QAPP and with applicable portions of the EPA guidance (EPA 1994a, b).

The evaluations considered the following elements:

- Chain-of-custody records
- Holding times
- Blank results (laboratory, method, and field)

- Surrogate recoveries
- Laboratory matrix spikes and matrix spike duplicates (MS/MD) (including laboratory control samples)
- Duplicate analyses (field and laboratory)
- Quantitation limits
- Completeness.

Data precision was evaluated through laboratory, field, and matrix spike duplicates. Data accuracy was evaluated through laboratory control samples, surrogate spikes, and matrix spikes. Data qualifiers were assigned, as necessary, during the data quality evaluations in accordance with EPA guidelines and data quality objectives established for this project. Data qualifiers that were assigned during data validation are defined within the footnotes of the tabulated analytical data provided in Appendices C and D.

Data summary tables, data validation report, and laboratory data reports for the September/October 2003 and October/November 2004 Phase III RI soil investigations are provided in Appendices E, F, and G, respectively. The data validation report and laboratory data packages for the quarterly groundwater events are provided with the respective quarterly reports (Landau Associates 2004a,b,c and 2005a,b). All other data discussed herein have been provided with previous submittals.

5.4.1 DATA PROCESSING AND MANAGEMENT

Data collected during the Phase III RI were processed and managed using a project database (GIS\Key). Additionally, other computer software, including AutoCad, gINT, and Excel were used for evaluation and presentation of the data. Each Phase III RI sample was identified based on the sample location number and depth, as applicable. Field quality control samples (e.g., field duplicates, equipment blanks, etc.) and field parameter measurements (e.g., temperature, pH, specific conductance, dissolved oxygen) were documented on the sample collection forms, and analyses requests were identified from the chain-of-custody forms. Analytical laboratory results were provided in electronic format from the laboratory and were transferred directly into the project database. On occasion, due to small analysis volume, data entry was conducted manually. All entries, whether electronic or manual, underwent a quality assurance check before data quality evaluation or any other type of data analysis was conducted. After the data validation was completed, any data qualifiers were added to the project database.

Data used for graphical presentation or analytical evaluations in AutoCad and Excel originated from the project database after quality assurance checks were complete. Data entered into gINT for the boring logs and well construction information were entered manually based on information recorded in the field on the log of exploration and well completion forms. Each data entry and formula used for the

graphical illustrations, spreadsheets, or statistical evaluations was spot-checked again before final data analyses were conducted. Some contour maps were prepared by hand with some initial plots drawn by GIS\Key when the interpretations by the contouring software did not provide an accurate representation of the data considering knowledge of the conceptual site model.

6.0 GEOLOGY AND HYDROGEOLOGY

This section describes the geology and hydrogeology at the Terminal, as interpreted from the data collected during the site Phase II RI and Phase III RI. The information provided in this section constitutes the geologic/hydrogeologic conceptual site model as it has been refined since previous reports (Landau Associates 1999b, 2001b). This information has also been used to evaluate the potential for contaminant migration, as discussed in Section 8.0. Descriptions of the regional geologic and hydrogeologic settings were provided previously in Section 3.0.

6.1 LOCAL GEOLOGY

The local geology at the Terminal was interpreted from lithologic descriptions of subsurface soil collected during drilling of soil borings and monitoring wells, historically and during the Phase III RI; boring logs from adjacent properties; and regional geologic information (see Section 3.2). Available boring logs from historical and Phase II RI locations, general soil profiles for different areas of the Terminal based on data collected during the Phase III preliminary evaluation, boring logs from the Phase III interim subsurface investigation, and boring logs from the September/October 2003 and October/November Phase III investigations are provided in Appendix A. Except for the 2003 and 2004 investigations, these logs were provided with previous transmittals.

The Terminal is located on sand fill within the floodplain of the Willamette River. Prior to development of waterfront facilities, this region was characterized by alluvial river deposits consisting of sand and silt deposited by a series of braided channels, lowlands, and marshes. The Willamette River channel has historically, and in the present, been dredged to facilitate transport and moorage of shipping vessels for various industries along the riverfront. It is likely that the shallow soil at the Terminal consists partly of historically dredged fill material that was placed in the upland areas. Historical aerial photographs from the late 1930s indicate that prior to construction of the Terminal the geomorphology of the area can be characterized as river floodplain (Figures 2-12 and 2-13). There are no apparent features either natural (e.g. historic river channels or surface water bodies) or manmade that would have an effect on contaminant transport.

As shown on Figures 3-1 and 3-2, the local geology at the Terminal can be inferred from the regional geologic information. A description of the local geologic units observed or anticipated to be present at depth beneath the Terminal based on this data is provided below (from youngest to oldest):

- Fill (Qaf) - River deposits resulting from historic dredging of the Willamette River were likely used as fill material during land development at the Terminal; however, it is unknown whether this material constitutes all the fill at the Terminal or whether the fill in some areas (i.e., East Property) was simply regraded material from elsewhere on the property. The

surficial soil at the Terminal is predominantly fill material comprised of fine to medium sand with little silt. The fill material is generally indistinguishable from the uppermost alluvial sand that extends to about 20 ft BGS.

- Alluvium (Qal) - Alluvial sand and silt deposits are exposed at the surface or underlie the fill at the Terminal. This unit presumably was deposited as overbank or channel alluvium of the ancestral and recent Willamette River channel. Geologic information collected during investigations at the Terminal suggest that thick sequences of alluvial sands, silty sands, and silts are present beneath the Terminal to depths of at least 100 ft BGS.
- Catastrophic Flood Deposits (Qff) - These flood deposits were not observed at the Terminal, but exist at the surface as terraces in adjacent areas southeast of the Terminal, as shown on Figure 3-1. It is expected that, where they exist, they directly overlie the Troutdale Formation.
- Troutdale Formation (Tt) - Based on a boring log for a well owned by the Port of Portland, located about 2 miles northeast of the Terminal, the top of the Troutdale Formation is about 165 ft BGS. Silts and sands above the Troutdale Formation in this area indicate infilling of the ancestral channel with alluvium (Qal). Beeson et. al. (1991) reports that the Troutdale Formation deposits have been scoured by an ancestral Willamette River, shown on Figure 3-1. Subsurface explorations conducted to date at the Terminal have not encountered the Troutdale Formation.
- Sandy River Mudstone (Tsr) - Published geologic reports suggest that the Sandy River Mudstone deposits can be found at depths of more than 300 ft beneath the Terminal (Beeson et. al. 1991); however, no site-specific subsurface data to that depth are available to confirm the presence of these deposits.
- Columbia River Basalt Group (Tcr) - Published maps suggest that the CRBG deposits are present at depths of 300 to 450 ft beneath the Terminal (Beeson et. al. 1991; Madin 1994). However, no wells east of the Willamette River in the immediate vicinity of the Terminal have penetrated the overlying sedimentary deposits to the CRBG.

The geologic units encountered at the Terminal include the fill and alluvium.

6.2 LOCAL HYDROGEOLOGY

Based on similar geologic soil types and hydrogeologic characteristics, four principal near-surface hydrogeologic units have been identified at the Terminal. In descending order from ground surface, these units include: 1) an upper zone, 2) a confining unit, 3) a lower zone, and 4) a deep sand unit. As described in the following sections, depending on the continuity of the confining unit, the hydrogeologic units can act as distinct aquifer units with unconfined conditions in the upper zone and confined to semiconfined characteristics in the lower zone, or act as a single unconfined aquifer (beyond the extent of the confining unit). Figure 6-1 shows the location of 12 cross sections of the Terminal that illustrate the relationship between these units. The cross sections are presented on Figures 6-2 through

6-13. The interpretation of local geology and hydrogeology, as represented on the cross sections, was developed from several sources (i.e., soil and well boring logs, and CPT logs). Information from explorations with frequent sampling, such as the CPT, was weighted more heavily than information from explorations with less frequent sampling. The hydrogeologic units shown on the cross sections correlate with soil types identified within the fill and alluvium geologic units (see Section 6.1). More detailed descriptions of the hydrogeologic units are provided in the following sections.

6.2.1 UPPER ZONE

The upper zone at the Terminal occurs in the surficial and fill material alluvial sands. The soil is described as a brown to gray, fine- to medium-grained sand with occasional silt and gravel layers. Based on physical testing, silt content in this zone ranges from less than 5 percent to about 25 percent. The alluvial sand is reported to be mostly continuous throughout the Willamette River floodplain.

Hydrostratigraphic relationships and groundwater level data indicate that the upper zone appears to be an unconfined aquifer that is discontinuous in areas where the underlying confining unit is absent (e.g., toward the Willamette River). The top of the upper zone is defined by the shallow water table and, therefore, varies based on seasonal fluctuations. The base of the upper zone ranges from 10 to 20 ft BGS. The average saturated thickness of the upper zone varies from less than about 1 ft along the confining unit boundary to slightly less than 15 ft at wells located in the Main Terminal Tank Farm area. The variability in the upper zone water levels and, thus, the saturated thickness of the zone, generally is characterized by seasonal high water levels in the winter and spring and seasonal low water levels in the summer and fall. Currently, there are 50 Phase II and Phase III shallow wells, well points, and piezometers (including horizontal recovery well HRW-1 and ISCO wells OX-1S through OX-8S) installed within the upper zone at the Terminal.

6.2.2 CONFINING UNIT

A silt to sandy silt unit of variable thickness and areal extent separates the upper and lower zones across most of the Terminal. The silt unit appears to act as a confining or semi-confining layer for the lower zone. The silt unit consists of material that is characteristic of natural river overbank deposits, is heterogeneous, and varies in thickness across the site from less than 1 ft to about 30 ft. The confining unit is thickest in the eastern portion of the Main Terminal Tank Farm area and the Bell Terminal Tank Farm area, and thins as it extends westward in the Main Terminal Tank Farm area and as it extends westward and southward of the Bell Terminal Tank Farm area, as illustrated on the cross-sections (Figures 6-2 through 6-7, and Figure 6-11). In the western portion of the Main Terminal, as the confining unit

becomes thinner, it eventually becomes discontinuous layers of silt and no longer acts as a confining unit between the upper and lower zones. Based on soil boring logs and groundwater elevation data collected on the former PEO property, the confining unit presumably also appears to thin and becomes discontinuous on the eastern portion of the PEO property (Bridgewater 2001; Bridgewater 2002; URS 2002; Gradient 2003); however, boring logs are not available for all of the well locations on this property. The approximate boundary of the extent of the continuous confining unit is shown on Figure 6-1.

Where present at the Terminal, the uppermost boundary of the confining layer is encountered at about 16 to 20 ft BGS (8 to 13 ft elevation, MSL). Where the silt layer is not present (i.e., along the western portion of the Main Terminal at wells LW-22D through LW-25D, LW-6D, and LW-9D), the upper zone does not exist and the lower zone acts as a single unconfined groundwater zone.

Constant head permeability tests conducted during the Phase II RI on silt from the confining layer at well locations LW-1D, LW-3D, and LW-4D indicate that average vertical hydraulic conductivities range between 1.4×10^{-6} to 2.4×10^{-6} cm/sec, which is within the typical range of values for silt (Freeze and Cherry 1979).

6.2.3 LOWER ZONE

The lower zone occurs in interlayered river channel and overbank deposits. This material is characterized by gray, fine to medium, sand to silty sand with multiple discontinuous interlayers of silt up to 6 ft thick. In areas where the overlying confining unit is present, the lower zone generally displays semi-confined to confined aquifer characteristics. In areas where the confining unit is absent (i.e., western portion of the Main Terminal and presumably on the former PEO property), the lower zone appears to act as a single, unconfined aquifer. Where both water-bearing zones are present, the lower zone does not appear to be hydraulically connected with the upper zone, except along the edge of the confining unit over most of the Terminal and downgradient of the PCP mixing area, where the upper and lower zones appear to be interconnected based on the presence of PCP in both zones historically. As discussed in Sections 6.3 and 6.4, the hydrogeologic characteristics of the upper and lower zones (e.g., hydraulic conductivity, yield) and contaminant distributions vary throughout the units. Based on local stratigraphic data, the lower zone ranges in thickness from about 15 to 40 ft, depending on the continuity of the underlying silt layers. Where the underlying silt layers are continuous, they likely separate the lower zone from a deeper sand unit. Where the silt layers are discontinuous, the lower zone is likely in hydraulic connection with the deeper sand unit. Currently, there are 36 Phase II and Phase III wells (including recovery well RW-2) installed in the lower zone at the Terminal. Sixteen of these wells are installed in the area beyond the extent of the confining unit where the lower zone acts as an unconfined aquifer.

6.2.4 DEEP SAND UNIT

The deep sand unit is encountered at about 60 to 65 ft BGS. The unit is differentiated from the overlying sand and silt of the lower zone because it predominantly consists of fine to medium sand with low silt content. In most areas, the deep sand unit is separated from the lower zone by thin silt layers. The deep sand unit extends to at least 100 ft BGS, but the extent of the unit and its hydrogeologic characteristics could not be evaluated based on data collected to date at the Terminal. One deep sand unit monitoring well was previously installed at the Terminal within the soil removal area for the former PCP mixing area, but was abandoned prior to soil removal activities. Currently, there are no monitoring wells installed in the deep sand unit at the Terminal.

6.3 UPPER ZONE HYDROGEOLOGIC CHARACTERISTICS

This section describes the hydrogeologic characteristics of the upper zone, including groundwater flow, seasonal trends, and hydraulic parameter estimates and groundwater velocities. The hydrogeologic characteristics of the upper zone were evaluated using pre-Phase II RI groundwater level elevation measurements collected from 1993 and 1996, quarterly Phase II RI measurements from March 1997 through November 2004, Phase II continuous water level monitoring and Phase II baseline monitoring during aquifer tests at recovery wells RW-1 and RW-2, and Phase III RI measurements collected from October 2003 through November 2004. The historical groundwater level measurements between 1993 and 1996 were generally collected on a monthly basis and were reported in the Phase II RI report. Continuous water level monitoring and baseline monitoring for the aquifer tests conducted during the Phase II RI are documented in the aquifer test report (Landau Associates 1999b). Quarterly Phase II/III groundwater level measurements since March 1997 are presented in Table B-1 (Appendix B).

Groundwater elevations in the upper zone measured in February and November 2004 during the quarterly groundwater sampling events have been contoured and are shown on Figures 6-14 and 6-15. These quarterly events were chosen because they represent seasonal variability in groundwater elevations in the upper zone, and include data for the Phase III monitoring wells from the November 2004 event. Groundwater elevation contour maps for the monitoring conducted since January 1998 have been provided to DEQ in the quarterly groundwater monitoring reports. Groundwater elevation data collected on the former PEO property has not been included in this report because the most recent data available is from January 2003, and therefore, are not comparable to the 2004 elevations presented in this report. However, the groundwater elevation data from the former PEO property were used to assess the

groundwater flow elevations and flow patterns relative to those observed at the Terminal to estimate the extent of the confining unit on the former PEO property.

6.3.1 GROUNDWATER FLOW AND SEASONAL TRENDS

Phase II and Phase III RI groundwater elevation data indicate that, in general, horizontal groundwater flow in the upper zone within the developed area of the Terminal is consistently to the west/southwest toward the Willamette River. However, a localized shift in the groundwater flow direction to the south/southwest in the area near and including the former PCP mixing area likely reflects the influence of the east-west trending storm drain on groundwater flow. Monitoring wells on the East Property have been abandoned; however, historical groundwater levels measured in this area indicate that there is a localized change in the groundwater flow pattern such that the groundwater flow direction in this area is approximately radial away from the north-central property boundary (near LW-101S). Groundwater elevation maps showing this area are provided in quarterly reports prior to the third quarter 2003 event.

As previously discussed, the confining unit between the upper and lower zones thins and becomes discontinuous along the western portion of the Main Terminal. Groundwater elevations measured at wells located along this boundary reflect the change from two water-bearing zones (upper and lower) to a single unconfined water-bearing zone. For example, during the summer and fall months, well LW-10S and piezometers PZ-3 and PZ-4 are typically dry because they are located beyond the extent of the confining unit. Also, at Phase III RI well LW-27S, the water level is not typical of either a lower zone or upper zone water level, thereby indicating the edge of the confining unit and the transition from two groundwater zones to one. The groundwater flow patterns in this area mirror the western extent of the confining unit boundary and groundwater gradients increase sharply where groundwater from the upper zone flows over the confining unit boundary. In the area of the Bell Terminal Tank Farm area, wells LW-28S and LW-33S were dry during the November 2004 groundwater sampling event, and newly installed well LW-41S has been dry during the two quarterly events since installation. At wells LW-33S and LW-41S, the confining unit is likely thinner and discontinuous, as illustrated on Figure 6-9. Overall, the RI data to date show that the groundwater levels in the upper zone are influenced by seasonal variations in precipitation, but the groundwater flow patterns do not appear to vary significantly seasonally.

Hydrographs of water level elevations in the upper zone at selected wells (Figure 6-16) more clearly reflect the seasonal fluctuations, with seasonal lows during the fall months (October-November) and seasonal highs during the winter months (January-February). The hydrographs indicate that the upper

zone groundwater table surface fluctuates about 6 to 7 ft seasonally (between about 12 and 19 ft, MSL) for most of the monitoring wells. Figure 6-16 also shows that seasonal upper zone fluctuations generally correspond to seasonal fluctuations in the stage of the Willamette River.

Continuous water level data collected in February 1998 and May 1999 as part of the Phase II RI indicated that water levels in the upper zone do not appear to be directly influenced by semidiurnal fluctuations in the river stage.

Horizontal hydraulic gradients for the upper zone were calculated for four different areas of the Terminal: 1) the area between wells LW-7S and well P represents the northern portion of the Terminal where groundwater flow is generally directly west toward the Willamette River, 2) the area between wells D and LW-4S represents the central portion of the Terminal including the former PCP mixing area where groundwater flow is generally to the south/southwest, 3) the area in the central portion of the Main Terminal Tank Farm area near well LW-27S at the confining unit transition, and 4) the area between wells LW-32S and LW-31S, which represents the southern portions within the Bell Terminal Tank Farm area where groundwater flow is generally to the southwest. Average horizontal gradients range from about 0.006 to 0.067, with the greatest average gradients occurring in the central part of the Terminal at the confining unit boundary (0.067). Average gradients in the northern and southern parts of the Terminal are less and approximately equivalent (Table 6-1).

6.3.2 HYDRAULIC PARAMETER ESTIMATES AND GROUNDWATER VELOCITIES

Aquifer parameters for the upper zone, including transmissivity (T), hydraulic conductivity (K), and aquifer storage (S) [e.g., specific yield (S_Y) and storativity (S_A)] were estimated from data collected during Phase II RI activities for the Terminal. These included slug/bail tests at wells LW-1S and LW-11S and constant and variable rate pumping tests at recovery well RW-1 in May-June 1999. A detailed description of the slug/bail test, aquifer tests, and evaluation results are provided in the Phase II RI report (Landau Associates 2001b) and aquifer test report (Landau Associates 1999b).

The slug/bail test analyses results indicate that average K values in the upper zone range from about 40 ft/day at well LW-11S to about 160 ft/day at well LW-1S. For the RW-1 pumping test, the aquifer parameter results indicate that T estimates range from about 180 to 520 ft²/day and K estimates range from about 45 to 130 ft/day, assuming an average aquifer thickness of 4 ft. In general, slug tests provide estimates that are less representative of aquifer conditions than pumping tests; however, the Phase II RI slug test K estimates agree reasonably with the pumping test K estimates. The S values of 0.02 to 0.13 estimated for the upper zone from the pumping data are within the range of typical storage values for

unconfined aquifers. Image well evaluations resulted in little to no difference in aquifer parameter values, indicating that the river had very little to no influence on drawdown in RW-1 during pumping.

Horizontal groundwater velocity (V) is a function of hydraulic gradient, hydraulic conductivity, and effective porosity. Groundwater velocities for the upper zone were estimated using a form of Darcy's Law (Lohman 1972) and the effective porosity (n_e), as shown in the following equation:

$$V = \frac{Ki}{n_e}$$

where: V = average linear groundwater velocity

K = horizontal hydraulic conductivity

i = horizontal hydraulic gradient

n_e = effective porosity

For calculation of groundwater velocities, the range in K values for the upper zone based on the aquifer test evaluations (slug/bail tests and pumping tests) presented above is estimated to be between about 40 to 160 ft/day. Seasonally, horizontal hydraulic gradients range from 0.006 to 0.067. The effective porosity for the upper zone has not been directly measured, but is estimated to be about 0.3 based on the grain size of the aquifer material (Batu 1998). Based on these estimates, upper zone groundwater velocities were estimated to range between about 0.8 to 36 ft/day.

6.4 LOWER ZONE HYDROGEOLOGIC CHARACTERISTICS

This section describes the hydrogeologic characteristics of the lower zone, including groundwater flow and seasonal trends, river stage influence, hydraulic parameter estimates, and groundwater velocities. The hydrogeologic characteristics of the lower zone were evaluated using pre-Phase II RI groundwater level elevation measurements collected from 1993 and 1996, quarterly Phase II RI measurements from March 1997 through November 2004, Phase II continuous water level monitoring measurements, Phase II baseline monitoring during the aquifer tests, and aquifer test results and quarterly Phase III RI measurements from October 2003 through November 2004. Water level data pre-1996, Phase II continuous water level monitoring, and baseline monitoring during aquifer tests were documented in the Phase II RI report. Phase II and Phase III quarterly groundwater level measurements since March 1997 are included in Table B-1 (Appendix B).

Similar to the upper zone, groundwater elevation contour maps for February and November 2004 have been provided on Figures 6-17 and 6-18 to assess seasonal variability. The timing for the quarterly water level measurements was scheduled to estimate mean water level elevations or elevations minimally

influenced by river stage and to reduce the time-dependent variation between wells screened in the same water-bearing zone.

6.4.1 GROUNDWATER FLOW AND SEASONAL TRENDS

Since startup of groundwater interim action recovery well RW-2 in October 2002, pumping has modified groundwater flow in the lower zone in proximity to the pumping well, such that hydraulic capture is achieved to the west near LW-18D and to the south near LW-10D. Groundwater flow outside the RW-2 capture zone is generally to the west/southwest toward the Willamette River.

Hydrographs of water level elevations in the lower zone at selected wells (Figure 6-19) show typical seasonal fluctuations. Similar to the upper zone, the seasonal lows generally occur during the fall months (October-November). The seasonal highs in the lower zone most commonly occur during the spring months (April-May), likely in response to higher river stage, in contrast to the upper zone where groundwater seasonal highs occur in January-February. The hydrographs indicate that the lower zone groundwater elevations fluctuate about 6 to 7 ft seasonally, generally between about 5 and 12 ft MSL.

Continuous water level measurements conducted during the Phase II RI and documented in the Phase II RI report, show that during high river stage, groundwater flow in close proximity to the river is inward toward the site; however, groundwater flows toward and discharges to the river from the lower zone when the river stage is at moderate to lower levels. Continuous water level measurements also illustrate the direct correlation between the stages of the river and the lower zone water levels by showing the propagation of semidiurnal tidal fluctuations in the Willamette River into the lower zone. A more detailed discussion of the influence of the Willamette River stage on water levels in the lower zone is provided in the following section.

Groundwater elevations measured at Phase III wells located along the confining unit boundary in the western portion of the terminal reflect the change from two water-bearing zones (upper and lower) to a single unconfined water-bearing zone. For example, wells LW-9S and LW-10S and piezometers PZ-3 and PZ-4, located near or beyond the extent of the confining unit, are typically dry during summer and fall months. During the wetter winter and spring months, groundwater is observed within the upper zone along this boundary. In the Bell Terminal Tank Farm area, well LW-28S, which is located where the confining unit is thin and likely discontinuous was dry during the summer and fall 2004 quarterly sampling events. Wells LW-41S and LW-33S, located along the southern property boundary within the Bell Terminal Tank Farm area, were dry during the fourth quarter 2004 event, presumably due to the confining unit in this area being higher than at surrounding well locations, the upper zone being thinner in this area, and abnormally dry seasonal conditions. At well LW-27S, the water level appears to represent

an intermediate groundwater elevation between the upper zone and lower zone, thereby indicating the edge of the confining unit and the transition from two groundwater zones to one in this area. The groundwater flow patterns in this area mirror the western extent of the confining unit boundary and groundwater gradients increase sharply where the upper and lower zones converge.

Groundwater elevations measured in the lower water-bearing zone (lower zone) wells were used to estimate groundwater flow in the lower zone and in the area where the confining zone is absent. Groundwater elevation contours for the lower zone are presented on Figures 6-17 and 18. The groundwater flow pattern in the lower zone likely represents the combined influence of two factors: 1) upper zone groundwater flow over the confining unit boundary, and 2) the resulting hydrostatic pressure change when transitioning between confined conditions to unconfined conditions west of the confining unit boundary.

Horizontal hydraulic gradients for the lower zone were calculated for three different areas of the Terminal: 1) the area between well LW-1D and the Willamette River, which represents the northern portion of the Terminal where groundwater flow is generally west toward the river, 2) the area between wells OX-8D and LW-6D, which represents the central portion where groundwater flow is generally to the west-southwest toward the river, and 3) the area in the southern part of the Terminal near LW-30D. Average horizontal gradients range from 0.0006 in the central area of the Terminal to 0.002 in the northern portion of the Terminal (Table 6-1). Groundwater gradients are much greater within the area of influence for recovery well RW-2.

6.4.2 RIVER STAGE INFLUENCE ON LOWER ZONE GROUNDWATER

Baseline monitoring data collected prior to aquifer testing at recovery well RW-2 in February 1999 was used to estimate the correlation of groundwater flow characteristics in the lower zone with the Willamette River stage. This data was evaluated by the following methods: 1) comparison of the Willamette River data with groundwater elevation data at the shallow and deep monitoring wells, 2) calculation of tidal efficiencies and lag times between river stage fluctuations and lower zone well fluctuations, and 3) calculation of mean groundwater level elevations in the lower zone. The results of these Phase II activities are summarized below; more detailed discussions of the evaluations are presented in the aquifer test report (Landau Associates 1999b).

As previously discussed, the continuous water level data collected in the Willamette River and the deep monitoring wells during the baseline monitoring period of aquifer testing support the correlation between the groundwater level fluctuations in the lower zone with the stages of the Willamette River. This data was also used to evaluate the tidal efficiency and time lag on the lower zone water levels.

The baseline data indicate that during periods of river recharge to the lower zone (such as those observed in May 1999), tidal efficiencies generally increase with greater distance from the river. These results may be indicative of propagation of river influence farther inward during high river stage, but also reflect a dampening effect of tidal fluctuations in the river on water levels in the nearshore and intermediate lower zone wells. This is converse to the results collected in February 1998 where tidal efficiencies decreased with greater distance from the river during periods of groundwater discharge to the river and response to river stage was much more distinct, reflecting a more typical response to river influence (Landau Associates 1998). Average tidal efficiencies in well LW-12D2, formerly located within the former PCP mixing area and installed within the deep sand unit underlying the lower zone, were generally greater than in the lower zone wells located a comparable distance from the river during the May and June 1999 event. The LW-12D2 tidal efficiency data combined with the overall response to river stage at this location may indicate a more direct influence to river stage in this stratigraphic unit.

Time lags between each maximum and minimum fluctuation in the river and those in the wells were determined for each deep well and averaged. During increasing river stage, it took an average of about 42 minutes for a fluctuation in the Willamette River to be reflected at well LW-9D, located closest to the river, but it took an average of over 1.5 hours for the corresponding river stage influence to be recorded at well LW-12D1. During decreasing river stage, average time lag estimates ranged from about 1 hour at well J2 to about 3 hours at well LW-12D1. Overall average time lags at LW-12D2 appear to be less than the lower zone wells, again indicating a possible greater river influence in the sand unit underlying the lower zone than in the lower zone. A comparison of the May 1999 and February 1998 data indicate that average time lag estimates tend to be approximately the same for both periods. Tables summarizing the time lag calculations were provided in the aquifer test report and Phase II RI report.

To remove the effects of semidiurnal river stage fluctuations on the continuous water levels recorded in the deep wells, mean water level elevations were determined using a filtering method by Serfes (1991). The Serfes method uses a time-weighted, moving average to filter out the semidiurnal fluctuations in the wells from river stage influences to produce water level elevation data that are more representative of mean water level conditions. The adjusted groundwater flow directions indicated that mean groundwater flow in the lower zone was generally to the west toward the Willamette River during the monitoring period. Groundwater flow directly adjacent to the river is inward from the river during high river stages. However, mean flow conditions over most of the Terminal and during lower river stages through most of the year are generally toward the river.

6.4.3 HYDRAULIC PARAMETER ESTIMATES AND GROUNDWATER VELOCITIES

Aquifer parameter estimates for the lower zone were based on data collected during aquifer tests in May-June 1999, including slug/bail tests at five deep wells and a constant rate pumping test at recovery well RW-2. A detailed description of the aquifer tests, evaluation results, and plots is provided in the aquifer test report (Landau Associates 1999b).

Average K values representing the lower zone from the slug/bail test data ranged from about 25 ft/day at well J2 to 80 ft/day at well LW-6D. The average K values calculated at wells LW-11D and LW-9D do not appear to be representative of overall aquifer characteristics, but may possibly be related to the increase in silt content in the water-bearing zone and screened interval at LW-11D or to the effects of recharge from the river during the test period.

Aquifer parameters for the lower zone were also estimated based on data collected during a constant rate discharge test at RW-2. In the lower zone, the data indicate that estimated T values were higher than the upper zone, ranging from about 2,100 to 7,000 ft²/day. K values were comparable to the upper zone and representative values generally ranged from about 65 to 130 ft/day, assuming an average aquifer thickness of 32 ft. S values generally ranged from about 1.2×10^{-3} to 8.1×10^{-2} , which is within the typical range for storage for confined aquifers. Aquifer test data evaluations indicate that leakage from the upper zone or underlying units is likely occurring to some extent at each observation well and that wells located closest to the river are likely influenced by river recharge. Also, at well LW-9D, the aquifer test data indicate that unconfined aquifer conditions exist at this location. This is consistent with stratigraphic data that indicate that the confining unit between the upper and lower zone is absent at this location creating unconfined conditions and a connection between groundwater in the lower zone and the river.

Groundwater velocities for the lower zone were estimated using the equation provided in Section 6.3.2. For calculation of groundwater velocities, the range in K values for the lower zone based on the aquifer test evaluations (slug/bail tests and pumping tests) presented above is estimated to be between 25 and 130 ft/day. Seasonally, horizontal hydraulic gradients range from 0.0006 to 0.002. The effective porosity for the lower zone has not been directly measured, but is estimated to be about 0.3 based on the grain size of the aquifer material (Batu 1998). Based on these aquifer parameter estimates, lower zone groundwater velocities are estimated to range between about 0.05 to 0.9 ft/day.

6.5 VERTICAL GROUNDWATER FLOW

The potential for groundwater flow between the upper and lower zones was evaluated through calculation of vertical hydraulic gradients at shallow and deep well pairs, LW-1S/1D, D/LW-3D, J1/J2,

LW-4S/4D, LW-9S/9D, LW-10S/10D, LW-11S/11D, LW-20S/20D, LW-29S/29D, and LW-32S/32D. Vertical hydraulic gradients were calculated from groundwater elevations measured during the quarterly sampling events from March 1997 through November 2004 (Table 6-2). Vertical gradients were consistently downward at all well pairs during this period. As shown in Table 6-2, vertical gradients at the well pairs between the upper and lower groundwater zones ranged from 0.07 to 0.55. The LW-9S/D well pair, located adjacent to the Willamette River in an area where the confining unit between the upper and lower zones is absent, had the lowest vertical gradient (0.07). The low vertical gradient in this area confirms that the upper and lower zones act as one hydrogeologic unit in this area. The vertical gradients between the upper and lower zones were also much greater than those between the lower zone and the deep sand unit, as represented by abandoned wells LW-12D1/12D2 (average vertical gradient of 0.01).

Figure 6-20 shows the seasonal variability of the vertical gradients at each of the well pair locations. Vertical gradients at the well pairs where long-term data are available are greatest during the seasonal low periods in the fall (October-November). The lowest vertical gradients generally correspond to intermediate seasonal periods during the late spring months (April-May).

6.6 AQUIFER RECHARGE AND DISCHARGE

Groundwater in the upper zone is most likely recharged by direct infiltration from precipitation. Lower zone groundwater appears to be recharged primarily from the upper zone and from subsurface flow from the north and east. Groundwater from both water-bearing zones generally discharges to the Willamette River. Groundwater in the lower zone is recharged by the Willamette River during periods of high river flow in response to short-term increases in river stage. The radial flow pattern in the upper zone at the north side of the East Property may be representative of localized recharge to the upper zone in this area.

7.0 NATURE AND EXTENT OF CONTAMINATION

This section provides the results of an evaluation of the nature and extent of contamination in the soil and groundwater at the Terminal. The nature of the contamination was determined based on the contaminants detected in samples collected during the various investigations conducted at the Terminal and comparison of soil and groundwater concentrations to preliminary screening levels. The extent of the contamination was determined based on the horizontal and vertical distribution of these contaminants in groundwater and soil. A discussion of the fate and transport of the contaminants based on the evaluation presented in this section is provided in Section 8.0.

The following preliminary soil screening levels were used to evaluate the soil sample results representing the upper 3 ft of soil:

- EPA Region 9 preliminary remediation goals (PRGs) for industrial soil (EPA 2004).
- EPA Region 9 PRGs for the potential migration of contaminants from soil to groundwater using a dilution-attenuation factor of 20 (DAF=20)¹ (EPA 2004).
- Oregon DEQ ecological risk screening level values (SLVs) for soil (DEQ 2001) for the protection of plants, mammals, birds, and invertebrates. Ecological risk is typically evaluated based on the known or suspected presence of hazardous substances in surficial soil (upper 3 ft; DEQ 2001).
- Oregon DEQ generic risk-based concentrations for petroleum constituents and total petroleum hydrocarbons based on occupational, construction worker, and excavation worker exposure to soil through ingestion, dermal contact, and inhalation; occupational exposure via volatilization to outdoor air; and occupational exposure via leaching to groundwater (DEQ 2003b).
- Site-specific background concentrations for metals determined previously during the COPC and CPEC screening process for Phase I and Phase II soil (Landau Associates 1999a). Metal concentrations in soil were first compared to the site-specific background concentrations; comparison of soil concentrations to the other preliminary screening levels listed above was only conducted where the soil concentrations exceeded background. The COPC/CPEC screening results will be updated to include the Phase III RI data and will be presented in the Phase II/III human health and ecological risk assessments.

The following preliminary soil screening levels used for the evaluation of the soil sample results representing soil greater than 3 ft in depth include the following:

- EPA Region 9 PRGs for the potential migration of contaminants from soil to groundwater using a dilution-attenuation factor of 20 (DAF=20)¹ (EPA 2004).

¹ The PRGs for migration to groundwater are based upon back-calculation from a non-zero maximum contaminant level (MCL), an MCL goal (MCLG), or a tap water PRG. Because these levels are based upon an exposure scenario (drinking water) that is excluded by the beneficial use determination for the Terminal, it is appropriate to use the higher DAF as a conservative method for screening.

- Oregon DEQ generic risk-based concentrations for petroleum constituents and total petroleum hydrocarbons excavation worker exposure to soil through ingestion, dermal contact, and inhalation; occupational exposure via volatilization to outdoor air; and occupational exposure via leaching to groundwater (DEQ 2003b).
- Site-specific background concentrations for metals determined previously during the COPC/CPEC screening process for Phase I and Phase II soil (Landau Associates 1999a). Metal concentrations in soil were first compared to the site-specific background concentrations; comparison of soil concentrations to the other preliminary screening levels listed above was only conducted where the soil concentrations exceeded background.

The preliminary groundwater screening levels used for the evaluation of the groundwater sample results include the following:

- EPA National Recommended Water Quality Criteria (EPA 2002).
- Oregon DEQ ecological risk SLVs (DEQ 2001) for the protection of aquatic species, mammals, and birds.
- Oregon Ambient Water Quality Criteria for freshwater, acute and chronic exposures to aquatic species and human consumption of organism only (Table 33A; DEQ 2004b).
- Oregon DEQ generic risk-based concentrations (RBCs) for petroleum constituents and total petroleum hydrocarbons based on construction and excavation worker exposure to groundwater, and occupational exposure via volatilization to outdoor air from groundwater (DEQ 2003b).
- Site-specific background concentrations for metals determined previously during the COPC/CPEC screening process for upper and lower zone groundwater (Landau Associates 1999a). Metal concentrations in upper and lower zone groundwater were first compared to the site-specific background concentrations; comparison of groundwater concentrations to the other preliminary screening levels listed above was only conducted where groundwater concentrations exceeded background.

These preliminary screening levels are presented in Appendices C and D for soil and groundwater, respectively. The comparison of Phases II and III RI soil and groundwater results to these preliminary screening levels is intended to provide a preliminary and conservative evaluation of the magnitude and areas of contaminant concentrations present at the Terminal exceeding these preliminary screening levels. The screening levels are not presented as cleanup levels. In addition to site-specific background concentrations, only surface water screening levels were used for comparison to groundwater contaminant concentrations because the primary pathway of concern at the Terminal is groundwater to surface water. Groundwater within the locality of the facility is not currently used as drinking water nor is it reasonably likely to be used as a drinking water source in the future based on the results of the beneficial water use determination (Section 4.3). Final screening levels to be used for determining COPCs/CPECs for the Terminal based on Phase II and Phase III soil and groundwater results will be

identified during the risk assessment process. Also, as indicated earlier, hot spots of contamination will be identified following determination of acceptable risk levels during the risk assessment process.

7.1 SOIL

The nature and extent of contamination present in the soil at the Terminal was evaluated based on chemical results for soil samples collected during the Phase II and the Phase III RIs. Soil concentrations discussed in the following sections are representative of soil remaining at the Terminal following completion of interim removal actions (Section 2.0).

7.1.1 SELECTED CONTAMINANTS OF INTEREST

Tables summarizing the constituents detected in soil at the Terminal are provided in Appendix C. Consistent with the historical uses of the Terminal for bulk storage of petroleum products and for blending of specialty wood treating products, constituents detected in the soil include these chemical groups: petroleum hydrocarbons and constituents that are commonly associated with petroleum products (i.e., PAHs and VOCs); metals; and chlorinated phenols. To focus the discussion in this report on the distribution of constituents that will likely be risk drivers, concentrations for only a few constituents from each of these groups of chemicals (i.e., TPH, cPAHs, VOCs, chlorinated phenols, and metals) were selected for presentation on the Terminal maps. The maps are presented on Figures 7-1 through 7-26. The constituents selected for presentation of soil concentrations and referred to throughout this discussion as selected contaminants of interest (COIs) include: diesel-range and gasoline-range petroleum hydrocarbons, benzo(a)pyrene, benzene, ethylbenzene, lead, zinc, and PCP. These constituents were identified as the selected COIs based on the frequency that these constituents were detected in the soil and groundwater and the frequency that the detected concentrations exceed the minimum preliminary screening levels.

For example, diesel-range and gasoline-range petroleum hydrocarbons were the most frequently detected petroleum hydrocarbons in soil. For this reason, and because of the history of the Terminal as a bulk fuel storage facility, diesel-range and gasoline-range petroleum hydrocarbons were included in the selected COIs. Of the PAHs detected in soil, benzo(a)pyrene concentrations most frequently exceeded the preliminary screening level. Although benzene and ethylbenzene were not the most frequently detected VOCs in soil, they were included in the selected COIs because the concentrations of benzene and ethylbenzene in soil most frequently exceed the preliminary screening levels. Very few of the concentrations for the other detected VOCs in soil exceed preliminary screening levels.

Except for mercury and nickel, each metal was detected in 98 percent or more of the soil samples analyzed. The frequency of metal detections is likely related to the ubiquitous occurrence of most metals analyzed in soil in this area. Therefore, instead of using the frequency of detection for identifying the metals of interest, the frequency that the metals concentrations exceed the preliminary screening levels, including site-specific background, was used. A comparison of the concentrations for individual metals to preliminary screening levels indicates that the metals that most frequently exceed the minimum preliminary screening level in soil are lead and zinc.

PCP was also included in the selected COIs based on the historical uses of PCP in the specialty wood treating products blended and stored at the Terminal.

Preliminary screening levels for all detected constituents in soil, when available, are presented in Tables C-1 through C-6 of Appendix C. As noted above, COPCs/CPECs will be identified through the screening process defined by DEQ guidance (DEQ 1999, 2000b) during the upcoming risk assessment.

7.1.2 CONTAMINANT DISTRIBUTION

This section evaluates the distribution of the COIs in soil at the Terminal at concentrations above the minimum preliminary screening levels, except for diesel-range petroleum hydrocarbons, for which no applicable risk-based preliminary screening levels are available. The evaluation includes both the horizontal and vertical distribution of the COIs. To facilitate evaluation of the horizontal distribution, the Terminal was divided into six subareas based on historical Terminal operations: the Main Terminal Tank Farm area, the Bell Terminal Tank Farm area, the loading rack/entrance area of the Main Terminal Tank Farm area, the eastern portion of the Phase III study area, the asphalt-paved road area located north of the Bell Terminal Tank Farm area, and the Phase II study area (Figure 1-2). To facilitate evaluation of the vertical distribution, soil was divided into four depth intervals: surface soil (0 to 0.5 ft BGS); shallow unsaturated soil (1 to 1.5 BGS and 5 to 5.5 ft BGS); and the capillary fringe (and deeper). If a COI was not detected in any samples for a depth interval, the constituent is not illustrated for that depth interval. The remainder of this section discusses the distribution of the selected COIs at concentrations above the preliminary screening levels at the four depth intervals for each subarea.

7.1.2.1 Main Terminal Tank Farm Area

Locations where soil samples were collected within the Main Terminal Tank Farm area are shown on Figure 2-7. Concentrations of detected constituents within this area are provided in Table C-1.

Surface Soil

A total of 15 surface soil samples (i.e., the upper 0.5 ft of soil) were collected from within the Main Terminal Tank Farm area and submitted for analysis. The distribution of the eight selected COIs in the Main Terminal Tank farm area, based on the results for these 15 soil samples, is shown on Figures 7-1 through 7-6. Of the eight selected COIs, only benzo(a)pyrene, lead, and zinc were detected at concentrations above the minimum preliminary screening levels. Diesel-range petroleum hydrocarbons were detected in the surface soil, but at concentrations below the minimum preliminary screening level of 23,000 mg/kg (DEQ risk-based concentration for direct soil exposure to construction worker; DEQ 2003b, as shown on Figure 7-1. Diesel-range petroleum hydrocarbons in the surface soil ranged from less than the laboratory reporting limit (i.e., nondetect) to 438 mg/kg. No gasoline-range petroleum hydrocarbon concentrations were greater than the laboratory reporting limit, as shown on Figure 7-2. As shown on Figure 7-3, the distribution of benzo(a)pyrene at concentrations exceeding the preliminary screening levels is limited to an area in the southern portion of the Main Terminal Tank Farm area, whereas, the distribution of lead and zinc at concentrations exceeding the respective preliminary screening levels is more widespread (shown on Figures 7-4 and 7-5, respectively). Most of the detected benzo(a)pyrene, lead, and zinc at concentrations above the respective minimum preliminary screening levels in the Main Terminal Tank Farm area surface soil are associated with composite samples; therefore, the distribution of these constituents is conservatively illustrated by plotting the composite concentrations at each subsample location.

Shallow Unsaturated Soil

A total of 24 soil samples were collected from the shallow unsaturated soil within the Main Terminal Tank Farm area and submitted for analysis. For this discussion, shallow unsaturated soil includes the 1 to 1.5 ft BGS and 5 to 5.5 ft BGS sample depth intervals. The distribution of the eight selected COIs, with respect to the minimum preliminary screening levels (if applicable), at these depths are shown on Figures 7-7 through 7-11 and 7-12 through 7-18. Similar to the shallow soil in the Main Terminal Tank Farm area, diesel-range petroleum hydrocarbons were detected at concentrations greater than 100 mg/kg in the shallow unsaturated soil. Concentrations of diesel-range petroleum hydrocarbons greater than 1,000 mg/kg (i.e., up to 7,170 mg/kg) were detected in the shallow unsaturated soil at and around the conveyance/manifold pipes where the gasoline-range petroleum hydrocarbons were also detected (Figures 7-7 and 7-12). The COIs detected at concentrations above the minimum preliminary screening levels within the shallow unsaturated soil include lead (at the 1 to 1.5 ft depth interval), zinc (at the 1 to 1.5 ft depth interval), gasoline-range petroleum hydrocarbons (at the 5 to 5.5 ft depth interval),

and benzene (at the 5 to 5.5 ft depth interval). The distribution of lead and zinc concentrations exceeding the preliminary screening levels do not correlate except at a limited number of locations. Gasoline-range petroleum hydrocarbons and benzene concentrations above the preliminary screening levels appear to be limited to an area near the conveyance/manifold pipes that trend northeast-southwest through the Main Terminal Tank Farm area (Figures 7-13 and 7-15, respectively). The presence of benzene and gasoline-range petroleum hydrocarbons in this area at this depth may indicate a potential source for the gasoline-range petroleum hydrocarbon and benzene contamination found in the capillary fringe soil (discussed later in this section). However, these constituents were not detected or were detected at low concentrations below the preliminary screening levels within the surface soil and at the 1 to 1.5 ft depth interval.

Capillary Fringe Soil

A total of 49 soil samples were collected from the capillary fringe or deeper in the Main Terminal Tank Farm area and submitted for analysis. The results for these samples reveal that the highest concentrations of the selected COIs in the Main Terminal Tank Farm area are present in soil within the capillary fringe depth interval. Diesel-range petroleum hydrocarbon concentrations range from less than the laboratory reporting limit (i.e., nondetect) to 36,100 mg/kg. (No relevant preliminary screening level is available for diesel-range petroleum hydrocarbons present in soil below a depth of 3 ft BGS.) The distribution of diesel-range petroleum hydrocarbons in the capillary fringe soil is shown on Figure 7-19. Gasoline-range petroleum hydrocarbon concentrations range from nondetect to 8,920 mg/kg. The approximate horizontal extent of gasoline-range petroleum hydrocarbons at concentrations exceeding the preliminary screening level (110 mg/kg; DEQ risk-based concentration for occupational exposure via leaching to groundwater; DEQ 2003b) is shown on Figure 7-20. Some of the highest concentrations of each range of petroleum hydrocarbons are present in samples collected from the hand-augered borings located adjacent to the conveyance/manifold pipes (e.g., HB-01, HB-02, and HB-03); however, the maximum diesel-range petroleum hydrocarbon concentration (36,100 mg/kg or 3 percent diesel-range petroleum hydrocarbons in soil) was found near the northern property boundary at LW-19S. Components of gasoline (e.g., benzene and ethylbenzene) are also present within the capillary fringe soil in the Main Terminal Tank Farm area at concentrations exceeding the preliminary screening levels (0.03 mg/kg and 13 mg/kg, respectively), but the area of impact is much smaller, as shown on Figures 7-22 and 7-23. Benzo(a)pyrene, a component of diesel, is not present in the capillary fringe soil at concentrations exceeding the preliminary screening level of 0.21 mg/kg (Figure 7-21). The presence of lead in the capillary fringe soil in the Main Terminal Tank Farm area at concentrations exceeding the preliminary

screening levels is limited to a few sampling locations. Zinc was the only COI not detected at concentrations exceeding the preliminary screening level in the Main Terminal Tank Farm area capillary fringe soil.

7.1.2.2 Bell Terminal Tank Farm Area

Locations where soil samples were collected within the Bell Terminal Tank Farm area are shown on Figure 2-7. Concentrations of detected constituents in this area are provided in Table C-2.

Surface Soil

A total of 23 surface soil samples have been collected at the Bell Terminal Tank Farm area and submitted for analysis. The distribution of the eight selected COIs in the surface soil (i.e., the upper 0.5 ft of soil) based on the results for these samples is shown on Figures 7-1 through 7-6. Of the eight selected COIs, only benzo(a)pyrene, lead, and zinc were detected at concentrations above the minimum preliminary screening levels. Gasoline-range petroleum hydrocarbons were not detected in surface soil (Figure 7-2). As shown on Figures 7-3, 7-4, and 7-5, the presence of these three constituents at concentrations exceeding the preliminary screening levels in the surface soil appears to extend throughout the Bell Terminal Tank Farm area; however, many of the sampling locations shown to contain elevated concentrations are associated with composite samples and, therefore, the contoured areas represent a conservative representation of the contaminant distribution. Diesel-range petroleum hydrocarbons were also detected in the surface soil, but at relatively low concentrations ranging from nondetect to 859 mg/kg. Many of these detected concentrations are also associated with composite samples. Samples collected from the upper 2 ft of soil within the eastern portion of the former PEO property contained diesel-range petroleum hydrocarbon concentrations ranging from 97.6 to 4,280 mg/kg, which are greater than those observed within the Bell Terminal Tank Farm area (Figure 7-7; Bridgewater 2001).

Shallow Unsaturated Soil

A total of 33 soil samples were collected from the shallow unsaturated soil in the Bell Terminal Tank Farm area and submitted for analysis. Results for these soil samples indicate that the three COIs present in the surface soil at concentrations exceeding the preliminary screening levels [benzo(a)pyrene, lead, and zinc] are also present in the shallow unsaturated soil at concentrations exceeding the preliminary screening levels, but the impacted area is much smaller and generally limited to an area near the western property boundary as shown on Figures 7-9, 7-10, and 7-11. Also, the depth of impact does not appear to extend to the 5 to 5.5 ft BGS depth interval, as shown on Figures 7-14, 7-16, and 7-17. Diesel-range

petroleum hydrocarbons ranged from nondetect to 66 mg/kg in the shallow unsaturated soil. The other four COIs (gasoline-range petroleum hydrocarbons, benzene, ethylbenzene, and PCP) were not detected in the shallow unsaturated soil at concentrations exceeding the respective preliminary screening levels.

Capillary Fringe Soil

A total of 45 soil samples have been collected within the capillary fringe in the Bell Terminal Tank Farm area and submitted for analysis. Results for these samples indicate that of the eight selected COIs, only gasoline-range petroleum hydrocarbons were detected at concentrations exceeding the minimum preliminary screening level (Figure 7-20). Diesel-range petroleum hydrocarbons were also detected in the capillary fringe soil at concentrations ranging from nondetect to 15,100 mg/kg (Figure 7-19), but no relevant preliminary screening level is available for diesel-range petroleum hydrocarbons present in soil below a depth of 3 ft BGS. The elevated concentrations of gasoline-range and diesel-range petroleum hydrocarbons appear to be focused in three areas: adjacent to the east-west trending pipeline, along the western property boundary outside the tank farm walls in an area previously used by owners and/or operators of the adjacent property, and in the central portion of the Bell Terminal Tank Farm area (Figures 7-19 and 7-20). The presence of diesel-range hydrocarbons at the north side of the Bell Terminal at concentrations exceeding 1,000 mg/kg is based on the results of a composite sample within grid 22. This concentration is likely due to soil collected at subsample location G22-03, located near the east-west trending pipeline. To further evaluate the nature and extent of gasoline-range and diesel-range petroleum hydrocarbons within the capillary fringe at the Bell Terminal Tank Farm area, concentrations of these compounds along the eastern portion of the adjacent property boundary were evaluated. Figures 7-19 and 7-20 show the locations on the eastern portion of the former PEO property boundary where soil samples were collected at depths within or below the capillary fringe and analyzed for diesel-range and gasoline-range petroleum hydrocarbons. As indicated on Figures 7-19 and 7-20, gasoline-range and diesel-range petroleum hydrocarbons are present in the soil at depths within or below the capillary fringe in the eastern portion of the former PEO property at concentrations similar to or greater than the concentrations detected within the Bell Terminal Tank Farm area (Bridgewater 2001). The highest diesel-range petroleum hydrocarbon concentrations were observed at locations along the east-west trending pipeline and along the western property boundary (15,100 mg/kg at LW-43S, 12,700 mg/kg at SCH56, and 10,200 mg/kg at SCH59) of the Bell Terminal Tank Farm area (Figure 7-19). These data indicate that there are likely sources of petroleum hydrocarbons originating from areas of former fuel storage on former PEO property in addition to the source originating within the central portion of the Bell Terminal. This is further supported by analytical results for soil samples collected in the upper 2 ft of soil

at the former PEO property, which indicate the presence of diesel-range petroleum hydrocarbons in the shallow soil within the eastern portion of the former PEO property at concentrations exceeding 1,000 mg/kg (Figure 7-7; Bridgewater 2001).

7.1.2.3 Loading Rack/Entrance Area of the Main Terminal

Locations where soil samples were collected within the loading rack/entrance area of the Main Terminal Tank Farm area are shown on Figure 2-7. Concentrations of detected constituents in this area are provided in Table C-3.

Surface Soil

Because this area is covered with gravel fill, surface soil samples were not collected, except at location LW-7S. Of the COIs, only PCP was detected in the surface soil at this location at a concentration of 0.011 mg/kg, which is below the preliminary screening level of 0.03 mg/kg [EPA Region 9 PRG for potential migration of contaminants from soil to groundwater using a DAF of 20 (EPA 2004);Figure 7-6]. The presence of PCP in this area is likely related to activities associated with the former PCP mixing area (see discussion on the Phase II area below.)

Shallow Unsaturated Soil

Eight soil samples were collected from the shallow unsaturated soil within the loading rack/entrance area of the Main Terminal Tank Farm area. These samples were collected at a depth interval of 1 to 1.5 ft BGS. Results for the soil indicate that PAHs, TPH, and VOCs are not present in the soil in this area at this depth interval. Metals were detected in the soil at this depth, but only zinc was detected at concentrations exceeding the preliminary screening level. The locations where the concentrations of zinc exceed the preliminary screening level are shown on Figure 7-11.

Capillary Fringe

Eleven soil samples were collected from the capillary fringe in the loading rack/entrance area and submitted for analysis. The results for these samples indicate that the frequency of detected constituents in soil increases in this area at the capillary fringe depth interval. A few PAHs; several VOCs; diesel-range, gasoline-range, and kerosene-range petroleum hydrocarbons; and metals were detected in the soil at this depth; however, of the eight selected COIs, only gasoline-range petroleum hydrocarbons were detected at concentrations exceeding the minimum preliminary screening levels (Figure 7-20). These exceedances are associated with a composite sample collected from biased sampling area B3, which is the former location of the loading racks from the Main Terminal Tank Farm area to trucks. However,

because the exceedances are associated with a composite sample, the contoured areas represent a conservative representation of the contaminant distribution.

7.1.2.4 Eastern Portion of the Phase III Study Area

Locations where soil samples were collected within the eastern portion of the Phase III study area are shown on Figure 2-7. Concentrations of detected constituents in this area are provided in Table C-4.

Surface Soil

Thirty-eight soil samples have been collected and submitted for analysis within the upper 0 to 0.5 ft depth interval in the eastern portion of the Phase III study area. The results for these samples indicate that of the eight selected COIs, only benzo(a)pyrene, lead, and zinc are present in surface soil at concentrations exceeding the preliminary screening levels (Figures 7-3, 7-4, and 7-5). Gasoline-range petroleum hydrocarbons, benzene, ethylbenzene, and PCP were not detected. Diesel-range petroleum hydrocarbons were also detected at this depth interval at concentrations ranging from nondetect to 549 mg/kg, but below the minimum preliminary screening level of 23,000 mg/kg (Figure 7-1). The detected concentrations of diesel-range petroleum hydrocarbons and cPAHS in the surface soil appear to be associated with oiling of historical roads in this area.

Shallow Unsaturated Soil

Seventeen soil samples were collected within the shallow unsaturated soil in the eastern portion of the Phase III study area. All but one of these samples were collected at a depth interval of 1 to 1.5 ft BGS. Because the capillary fringe in this area is shallow and close in depth to the 5.0 to 5.5 ft depth interval, only one sample (composite sample BA-11) was collected at the 5.0 to 5.5 ft depth interval within this area. Results for the soil samples indicate that benzo(a)pyrene, lead, and zinc are present at concentrations exceeding the preliminary screening levels at the 1 to 1.5 ft depth interval. The approximate horizontal extent of these exceedances is shown on Figures 7-9, 7-10, and 7-11, respectively. The frequency that lead and zinc are present at concentrations exceeding preliminary screening levels decreased significantly at the 1 to 1.5 ft depth interval compared to exceedances observed in the surface soil. Diesel-range and gasoline-range petroleum hydrocarbons were not detected at the 1 to 1.5 ft depth interval, except at one location, BA-11, where diesel-range petroleum hydrocarbons were detected at a concentration of 574 mg/kg (Figure 7-7); these constituents were not analyzed in the one sample from the 5 to 5.5 ft depth interval. At the 5.0 to 5.5 ft depth interval, the results for sample B-11 indicate that

benzo(a)pyrene (Figure 7-14) and other PAHs are not present at this depth at concentrations exceeding preliminary screening levels. Metals were not analyzed at this depth interval.

Capillary Fringe

Thirteen soil samples were collected within the capillary fringe soil in the eastern portion of the Phase III study area. At the capillary fringe depth interval, only a few PAHs [Figure 7-21 for benzo(a)pyrene] and VOCs (Figures 7-22 and 7-23 for benzene and ethylbenzene, respectively) were detected. Metals were frequently detected, but did not exceed the preliminary screening levels (Figures 7-24 and 7-25 for lead and zinc). Diesel-range and gasoline-range petroleum hydrocarbons were not detected (Figures 7-19 and 7-20).

7.1.2.5 Asphalt-Paved Road Area

Locations where soil samples were collected within the asphalt-paved road area are shown on Figure 2-7. One sample was collected at the 0 to 0.5 ft BGS depth interval; one sample was collected from the 1 to 1.5 ft BGS depth interval; and two samples were collected from the capillary fringe. Concentrations of detected constituents in this area are provided in Table C-5. Metals were detected at each of the soil depth intervals sampled (i.e., 0 to 0.5 ft BGS, 1 to 1.5 ft BGS, and the capillary fringe); however, concentrations of metals above the preliminary screening levels were only detected in the surface soil (0 to 0.5 ft BGS; Figures 7-4 and 7-5 for lead and zinc, respectively). PAHs and petroleum hydrocarbons were only detected in the surface soil sample. Benzo(a)pyrene was the only PAH (Figure 7-3) that was detected at concentrations above the preliminary screening levels within the surface soil depth interval only. Motor oil-range petroleum hydrocarbons were detected at a concentration of 301 mg/kg, but diesel-range and gasoline-range petroleum hydrocarbons were not detected at any depth interval (Figures 7-19 and 7-20, respectively). Samples collected in this area were collected below the asphalt surface and underlying roadbase material, with one exception, location G-20. The detected concentrations in the surface soil at this location likely result from the presence of these constituents in the roadbase material of the asphalt road.

7.1.2.6 Phase II Study Area

Locations where soil samples were collected that represent soil remaining in the Phase II study area are shown on Figure 2-7. Concentrations of PCP remaining in the soil following completion of the soil removal actions in the former soil stockpile area and former PCP mixing and warehouse areas are shown on Figure 2-4. Concentrations of detected constituents in soil remaining in this area are provided

in Table C-6. PCP was the constituent used to determine the extent of contamination and cleanup for the soil removal action in this area. Because of the limitations in excavating soil below the water table, the base of the removal action excavation did not extend beyond about 13 ft BGS. Consequently, PCP concentrations ranging from greater than 2 mg/kg to 180 mg/kg potentially remain within and adjacent to the former PCP mixing area at depths as shown on Figure 2-4. The effects of the ISCO injections on soil concentrations will be assessed at the completion of the full scale implementation.

Surface Soil

Because most of the surface soil was removed from this area during the removal actions, only samples from four locations (LB16, LS1, LS2, and LW-1D) represent the existing surface soil. PAHs, PCP, petroleum hydrocarbons, and metals were all detected in the surface soil in this area. The only PAH concentrations exceeding preliminary screening levels is benzo(a)pyrene (Figure 7-3). Lead (Figure 7-4), zinc (Figure 7-5), and copper are present at concentrations above the preliminary screening levels in small, localized areas. Concentrations of diesel-range (Figure 7-1) and motor-oil range petroleum hydrocarbons range from nondetect to 160 mg/kg and 130 mg/kg to 420 mg/kg, respectively. PCP was only detected at locations LW-1D and LB16 at concentrations exceeding the preliminary screening level of 0.03 mg/kg (Figure 7-6).

Shallow Unsaturated Soil

Seven samples represent the soil remaining at depths greater than 0.5 ft BGS, but above the capillary fringe in this area. At these depths (1.0 to 1.5 ft and 5.0 to 5.5 ft depth intervals), only PCP (Figure 7-18) exceeds preliminary screening levels. (Note that a figure showing PCP concentrations for the 1 to 1.5 ft BGS depth interval is not included because there were no detected concentrations.) No VOCs, except BTEX, were analyzed at these depth intervals. BTEX was not detected at concentrations above the laboratory reporting limits in the soil (Figure 7-15 for benzene). Copper and zinc were the only metals analyzed and both were detected, but at concentrations below the preliminary screening levels (Figures 7-10 and 7-16 for lead; Figures 7-11 and 7-17 for zinc). Diesel-range petroleum hydrocarbons were detected in three samples from the 5.0 to 5.5 ft depth interval at concentrations ranging from 6.4 to 66 mg/kg. Motor oil-range petroleum hydrocarbons were detected in one sample at a concentration of 98 mg/kg. Gasoline-range petroleum hydrocarbons were not detected within either depth interval (Figures 7-8 and 7-13).

Capillary Fringe

Seventy-five samples represent the soil remaining at depths within or below the capillary fringe in this area. At this depth interval, PCP is the predominant COI that was detected at concentrations above the preliminary screening level, as shown on 7-26. Soil containing PCP concentrations at these levels remained following the soil removal action in this area because of the physical constraints of excavating soil below the groundwater table. Residual PCP soil concentrations at this depth are being addressed through use of the ISCO technique in this area. Concentrations of diesel-range petroleum hydrocarbons in the soil ranged from nondetect to 4,700 mg/kg (Figure 7-19). Gasoline-range petroleum hydrocarbons at concentrations exceeding preliminary screening levels were observed at two locations, as shown on Figure 7-20. Dioxins and furans were also detected at locations within the former PCP mixing area at concentrations ranging from about .011 ng/kg to 5,110 ng/kg (total TEQ).

7.2 GROUNDWATER

The nature and extent of contamination present in the groundwater at the Terminal was evaluated based on chemical results for groundwater samples collected from Phase II and Phase III monitoring wells, injection wells, and recovery wells between October 2003 and November 2004 and from discrete groundwater samples collected from direct-push borings during the preliminary evaluation and the interim subsurface investigation during 2001-2002 at the Terminal. The data collected from monitoring wells in January 2003 and from direct-push borings on the adjacent former PEO property in 1996 and 1998 were also reviewed to assess the nature and extent of groundwater contamination.

7.2.1 SELECTED CONTAMINANTS OF INTEREST

Tables summarizing the results for detected constituents in groundwater at the Terminal are provided in Appendix D. Consistent with the constituents detected in the soil at the Terminal, petroleum hydrocarbons and individual constituents that are commonly associated with petroleum products (e.g., PAHs and VOCs), or wood treatment formulation operations (e.g. PCP), and metals were detected in groundwater. Similar to soil, only a few constituents from each of these groups of chemicals (i.e., petroleum hydrocarbons, PAHs, VOCs, and metals), which are expected to be drivers during the risk assessment, were plotted on maps of the Terminal (Figures 7-27 through 7-46). The concentrations were contoured using the minimum preliminary screening level for each selected constituent. The constituents selected for presentation and referred to throughout this discussion as selected COIs for groundwater include: diesel-range and gasoline-range petroleum hydrocarbons, benzene, ethylbenzene, and PCP. In addition, chromium and copper were included as COIs for the lower zone, with a specific focus on the

nearshore monitoring wells, including wells located along the river bank and those on the shoreline of the Willamette River, to assess the groundwater transport pathway to the river, as shown on Figures 7-47 and 7-48.

The COIs were selected based on the frequency that the constituents were detected in the groundwater and the frequency that the detected concentrations exceeded preliminary screening levels. Gasoline-range and diesel-range petroleum hydrocarbons were the most frequently detected petroleum hydrocarbons in groundwater. For this reason, and because of the history of the Terminal as a bulk fuel storage facility, diesel-range and gasoline-range petroleum hydrocarbons were included in the selected COIs. There are currently no published risk-based values to use as preliminary screening levels for assessment of diesel-range hydrocarbons in groundwater or surface water; therefore, the diesel-range petroleum hydrocarbon data are not contoured. Although benzene and ethylbenzene were not the most frequently detected VOCs in groundwater, they were included in the selected COIs because the concentrations of benzene and ethylbenzene in groundwater have most frequently exceeded the preliminary screening levels since monitoring began for the Phase III wells. PAHs were detected at a small number of wells (one upper zone well and four lower zone wells) at concentrations exceeding the preliminary screening levels. Of the PAHs detected in groundwater, no one constituent consistently exceeded the preliminary screening levels. Also, although present in soil, benzo(a)pyrene was not detected in groundwater at concentrations exceeding the preliminary screening level, except at two lower zone Phase III wells where only five quarters of data are available. Therefore, PAHs were not included in the selected COIs. PCP was included in the selected COIs based on the elevated concentrations detected in the groundwater in and downgradient of the former PCP mixing area over time. Metals, with the exception of chromium, which were often detected in soil, were generally not detected in upper zone groundwater exceeding site-specific background concentrations or the risk-based preliminary screening levels. Metals concentrations exceeding the preliminary screening levels are typically more prevalent in the lower zone groundwater. Lower zone metals concentrations tend to exceed preliminary screening levels more frequently for chromium, copper, nickel, and zinc. Chromium and copper have been included in the selected COIs for the lower zone, as described above. A discussion of an assessment of the metals concentrations is provided in Section 7.2.3.

Preliminary screening levels for detected constituents in groundwater are presented in Tables D-1 and D-2 of Appendix D of this report for the upper and lower zones, respectively.

7.2.2 CONTAMINANT DISTRIBUTION

As discussed in Section 6.2, two zones of groundwater are present below the Terminal: the upper zone and the lower zone. The distribution of the selected COIs in the two zones of groundwater is presented on Figures 7-27 to 7-36 and Figures 7-37 to 7-46, respectively, and discussed in the remainder of this section.

7.2.2.1 Upper Zone Groundwater

The analytical results for groundwater samples collected from the 45 upper zone wells during quarterly events from spring 1997 through November 2004 were evaluated for this report. For purposes of discussion and because the most recent Phase III RI well installation occurred during the fall 2004, presentation of groundwater data for this report is focused on data collected for the fourth quarter (October) 2003 event (including direct-push data from 1996 through 2002) and the fourth quarter (November) 2004 event. Trends in contaminant concentrations for quarterly data collected since 1997 or since well installation were evaluated and are discussed in Section 7.2.3. A discussion of the distribution of contaminants in the upper zone groundwater by area based on the October 2003 and November 2004 analytical data is provided below. Groundwater data collected from direct-push sampling points in 2001 during the planning stages for the Phase III RI and on the former PEO property between 1996 and 1998 for TPH constituents and for January 2003 for BTEX are also included with the October 2003 data. These are the most recent data available from locations on the PEO property for these constituents.

Main Terminal Tank Farm Area

Four upper zone wells located in the Main Terminal Tank Farm area were installed in the fall of 2003. One additional upper zone well was installed in November 2004. Therefore, the distribution of contaminants and evaluation of contaminant trends in upper zone groundwater within the Main Terminal Tank Farm area are based on a maximum of five quarters of data, collected between October 2003 and November 2004. In addition to the quarterly data, eight groundwater samples were collected from temporary well points in August through October 2001 and July 2002 for determining the locations of permanent monitoring wells. These results are presented with the October 2003 event data, which is the first quarter when data for the Phase III wells was collected. Upper zone monitoring wells are only located in the eastern half of the Main Terminal Tank Farm area. In the western half of the Main Terminal Tank Farm area, the confining unit becomes discontinuous and the upper and lower groundwater zones converge. As described in Section 6.2.3, groundwater levels in the western half of the Main Terminal Tank Farm area are consistent with those typically observed at wells screened within the

lower zone. This is also generally true for groundwater levels on the former PEO property; however, groundwater elevations for the former PEO property are not plotted because the most recent data available is from January 2003 and are not comparable to the 2004 groundwater elevations for the Terminal presented for this report. Evaluation of the contaminant distribution in groundwater throughout the western portion of the Main Terminal Tank Farm is provided in Section 7.2.2.1.

Results for upper zone groundwater in the Main Terminal Tank Farm area for the fourth quarter 2003 and fourth quarter 2004 groundwater monitoring events indicate the presence of diesel-range and gasoline-range petroleum hydrocarbons (Figures 7-27 through 7-30). Concentrations of diesel-range petroleum hydrocarbons in groundwater samples collected during the October 2003 groundwater monitoring event and in groundwater samples collected from temporary direct-push locations during earlier groundwater investigations ranged from nondetect to 19.6 mg/L (Figure 7-27). Concentrations of diesel-range petroleum hydrocarbons in groundwater samples collected during the November 2004 sampling event ranged from nondetect to 6.45 mg/L (Figure 7-28). During the October 2003 groundwater monitoring event, concentrations of gasoline-range petroleum hydrocarbons in the upper zone groundwater exceeding the preliminary screening level (12 mg/L; DEQ RBC, construction and excavation worker; DEQ 2003b) occurred at a single location (LW-21S; Figure 7-29); however, gasoline-range petroleum hydrocarbons were not detected above the preliminary screening level in November 2004 (Figure 7-30). Maximum concentrations of diesel-range and gasoline-range petroleum hydrocarbons are typically observed in groundwater at locations near tanks or conveyance pipelines located on the eastern portion of the Main Terminal Tank Farm area. During the October 2003 event, product was observed in wells Q and P (Table 7-3) at thicknesses ranging from 0.02 to 0.24 ft and near this area at direct-push location GW8-1 in 2001. During November 2004, product was observed at wells Q, LW-21S, and LW-27S (Table 7-3) with thicknesses ranging from 0.02 to 0.25 ft.

Constituents associated with the diesel-range and gasoline-range petroleum hydrocarbons (i.e., PAHs and VOCs) are also present in the upper zone groundwater in the Main Terminal Tank Farm area, but are not as widespread as the petroleum hydrocarbon constituents, as shown by the distribution of benzene and ethylbenzene concentrations on Figures 7-31 through 7-34. During the October 2003 sampling event, benzene was detected at a concentration exceeding the preliminary screening level of 51 µg/L (Oregon Ambient Water Quality Criteria, fish consumption only; DEQ 2004b) at one location (LW-21S at 1,600 µg/L; Figure 7-31). For the November 2004 sampling event, product was observed in LW-21S; therefore, this well was not sampled. Benzene was not detected in groundwater during the November 2004 groundwater monitoring event at wells at concentrations greater than the preliminary screening level (Figure 7-32). Occurrences of ethylbenzene in groundwater at concentrations exceeding the preliminary screening level (7.3 µg/L; Oregon DEQ ecological risk screening level value, surface

water; DEQ 2001) were more widespread than observed for benzene during the October 2003 event with the maximum concentration (940 µg/L) occurring at the same well as the maximum benzene concentration (i.e., LW-21S; Figure 7-33). During the November 2004 event, the distribution of ethylbenzene near LW-21S is not as well defined because a groundwater sample was not collected from well LW-21S due to the presence of product in the well and because groundwater samples were not collected from temporary well points during this event (Figure 7-34). For the October 2003 and November 2004 events, PAH concentrations ranged from nondetect to 13.8 µg/L. Only two PAHs (fluorene and phenanthrene) were detected at concentrations exceeding preliminary screening levels [3.9 µg/L for fluorene, 620 µg/L for phenanthrene; DEQ SLVs, surface water (DEQ 2001)], at four of the 2001 temporary well point locations. For the metals analyzed, chromium was detected at concentrations exceeding the preliminary screening level [0.011 mg/L; DEQ SLV, surface water (DEQ 2001)] at three locations (LW-13S, LW-19S, and RW-1) within the Main Terminal Tank Farm area during November 2004 and at three additional wells (LW-8S, LW-20S, and LW-27S) during other 2004 events (Table D-1). However, chromium concentrations did not exceed the preliminary screening levels at any location during the October 2003 event. Other metals were observed at concentrations exceeding the screening levels, including copper, zinc, and nickel, but at only a few locations. During the October 2003 event, PCP was detected in upper zone groundwater in the Main Terminal Tank Farm area downgradient of the former PCP mixing area at concentrations ranging from 0.58 to 1.1 µg/L and at a direct-push location (GW14-1) at a concentration of 4.35 µg/L (Figure 7-35), but only groundwater at the direct-push location exceeded the preliminary screening level of 3.0 µg/L (Oregon Ambient Water Quality Criteria, fish consumption only; DEQ 2004b). During the November 2004 event, PCP concentrations in this area were nondetect except at RW-1 where the concentration exceeded the preliminary screening level at a concentration of 123 µg/L (Figure 7-36). RW-1 is located downgradient of the former PCP mixing area and will be discussed in the context of the Phase II study area discussion below.

Bell Terminal Tank Farm Area

Twenty-three upper zone groundwater samples were collected from temporary well points in 2001 and 2002 in the Bell Terminal Tank Farm area. Seven permanent upper zone monitoring wells were installed in fall 2003 and an additional four upper zone wells were installed in fall 2004. Groundwater results for samples collected in October 2003 and from the temporary well points in 2001 and 2002 were combined with the most recent groundwater data from the former PEO property. For TPH constituents, the most recent groundwater data available from the former PEO property were collected in 1996 and 1998, and for BTEX constituents, the most recent data available was collected in January 2003. Data presented for November 2004 were only collected from the Terminal well locations.

Groundwater data collected within the Bell Terminal Tank Farm area and on the eastern portion of the former PEO property suggest the presence of three commingled petroleum hydrocarbon plumes within this area: 1) one originating in the central portion of the Bell Terminal Tank Farm area near the east-west trending pipeline, 2) one originating along the western property boundary outside the walls of the tank farm, and 3) one originating on the eastern portion of the former PEO property where significant petroleum releases are known to have occurred, such as in the area where the former diesel ASTs were located. Even though it is likely that the plume originating from the central portion of the Bell Terminal commingles with the plume originating near the western property boundary, and that both of these plumes commingle with other contamination originating on the former PEO property in the area where the former diesel ASTs were located, it is unlikely that the elevated concentrations observed near the western property boundary or on the former PEO property originate from the Bell Terminal tank farm operations. This conclusion is based on the significant increase in both soil and groundwater concentrations for petroleum constituents across the western property boundary and on the former PEO property. Also, product has consistently been observed with thicknesses up to about 6 ft in wells on the eastern portion of the former PEO property (well MW-4) between 2001 and 2003, but no product has ever been observed within the Bell Terminal Tank Farm area. Well MW-4 is located on the former PEO property near the locations of the former diesel ASTs and about 40 ft from the western property boundary of the Bell Terminal Tank Farm area, and about 100 ft from the operations portion of the Bell Terminal Tank Farm area. This contaminant distribution supports the presence of different sources than in the tank farm area.

Based on geologic cross-sections, soil boring data, and water level elevation data collected on the former PEO property (Bridgewater 2001; Bridgewater 2002; URS 2002; Gradient 2003), groundwater data from the eastern portion of the PEO property appear to represent concentrations in the upper zone, including wells MW-4 and MW-14, and some of the temporary Geoprobe locations. However, well boring information is not available for the monitoring wells (including MW-4) and other historical locations in this area and some of the Geoprobe borings do not extend deep enough to encounter the confining unit, if present. The estimated extent of the confining unit in this area based on available information is shown on Figure 6-1. To the west of the extent of the confining unit boundary, similar to observations within the Main Terminal Tank Farm area, groundwater data likely represents groundwater concentrations where the confining unit is absent; these groundwater concentrations are discussed under the lower zone groundwater section.

Based on data collected to date from the Bell Terminal Tank Farm area, the highest concentration of diesel-range petroleum hydrocarbons (796 mg/L) in the upper zone was observed in groundwater sample at temporary well point SCH-63B during October 2001. This temporary well point is located along the western property boundary of the Bell Terminal Tank Farm area, as shown on Figure 7-27.

This result is comparable to the concentration of 530 mg/L detected in the split of the same sample collected by Schnitzer representatives. Based on the direct-push data collected on the former PEO property in 1996 and 1998, diesel-range petroleum hydrocarbons concentrations ranging from 6.6 to 6.8 mg/L occur about 40 to 50 ft to the west of the western property boundary of the Bell Terminal Tank Farm area. (Figure 7-27). Gasoline-range petroleum hydrocarbon concentrations in the upper zone follow a similar distribution pattern as the diesel-range petroleum hydrocarbon concentrations, with concentrations only exceeding the preliminary screening level (12 mg/L; DEQ RBC, construction and excavation worker; DEQ 2003b) on the former PEO property where a maximum concentration of 38.7 mg/L was observed at direct-push location B-60 (Figure 7-29). Even though diesel-range petroleum hydrocarbons were detected at concentrations ranging from 0.59 to 22.2 mg/L and a gasoline-range petroleum hydrocarbon concentration exceeded the preliminary screening level within the central portion of the Bell Terminal Tank Farm area (maximum concentration of 12.2 mg/L from a direct-push location in July 2002), concentrations for both these constituents appear to decrease in the downgradient direction and then increase again at the western property boundary and on the former PEO property, further supporting the presence of different sources in these areas than in the Bell Terminal Tank Farm area (Figures 7-27 and 7-29). This interpretation is also supported by the distribution of benzene and ethylbenzene concentrations (Figures 7-31 and 7-33). Data are not available from the former PEO property in 2004. Constituents associated with diesel-range and gasoline-range petroleum hydrocarbons (i.e., PAHs and VOCs) are also present in the upper zone groundwater in the Bell Terminal Tank Farm area; however, the area of impacted groundwater appears to be smaller (Figures 7-31 through 7-34). Of the petroleum constituents, only ethylbenzene concentrations exceeding the preliminary screening level (7.3 µg/L; DEQ SLV, surface water; DEQ 2001) are present at three discrete locations in the Bell Terminal Tank Farm area, based mainly on the direct-push data. One location is along the pipeline within the central portion of the tank farm, another location is along the pipeline to the west, and another location is along the western property boundary outside the walls of the tank farm (Figure 7-33). However, during November 2004, the benzene and ethylbenzene concentrations appear to have decreased and are mostly nondetect except for low concentrations of benzene near the western property boundary (Figures 7-32 and 7-24). PAHs were detected even less frequently in the upper zone groundwater than benzene and ethylbenzene (Table D-1). Additional data from locations on the former PEO property in this area are needed to better define the source of these concentrations.

Loading Rack/Entrance Area of the Main Terminal

Results for groundwater collected from monitoring well LW-7S and temporary well point GW4-1 were used to evaluate the distribution of contaminants in the upper zone groundwater within the loading

rack/entrance area. Based on these results, the extent of the gasoline-range petroleum hydrocarbon and ethylbenzene detections in the Main Terminal Tank Farm area appear to extend into the western portion of the loading rack/entrance area based on the October 2003 and November 2004 data, but only ethylbenzene concentrations at this location exceed the preliminary screening level (Figures 7-29, 7-30, 7-33, and 7-34)

Eastern Portion of the Phase III Study Area

Results for three groundwater samples collected from temporary well points (GW6-1, GW15-1, and GW17-1) were used to evaluate the distribution of contaminants in the upper zone groundwater within the eastern portion of the Phase III Study Area. Petroleum hydrocarbon constituents were not analyzed at these three locations; however, no VOCs or PAHs (except low concentrations of pyrene) were detected in the upper zone groundwater. No permanent monitoring wells are located in this area.

Asphalt-Paved Road Area

Results for one groundwater sample collected from temporary well point, GW20-1, were used to evaluate the presence of contaminants in the upper zone groundwater within the asphalt-paved road area. No contaminants were detected in this sample. No permanent monitoring wells are located in this area.

Phase II Study Area

Results from permanent monitoring wells and two recovery wells were used to evaluate the distribution of contaminants in upper zone groundwater within the Phase II Study area. The only significant plume of contamination in the upper zone groundwater in the Phase II study area is PCP, as shown on Figures 7-35 and 7-36. In October 2003, PCP concentrations in an area within and downgradient of the former PCP mixing area exceeded the preliminary screening level [3.0 µg/L; Oregon AWQC for aquatic species (DEQ 2004b) and National AWQC for organisms only (EPA 2002)] with concentrations ranging from 130 µg/L to 2,100 µg/L (Figure 7-35). In November 2004, the overall size of the PCP plume had diminished and concentrations within the plume had decreased significantly with the previous maximum concentration at well OX-6S decreasing to 624 µg/L (Figure 7-36). These decreases in PCP concentrations appear to result from the July 2004 ISCO injection event within the PCP plume area (see Section 2.2.2.7). Plumes of petroleum hydrocarbon constituents originating within the Main Terminal Tank Farm area do not appear to be associated with those in the Phase II areas. Concentrations of diesel-range and gasoline-range petroleum hydrocarbons and VOCs downgradient of the former PCP mixing area are likely related to the presence of PCP carrier oils (e.g. mineral spirits) in groundwater and as NAPL (see Section 7.3.2). In this area, ethylbenzene is the only COI that exceeds the preliminary

screening level (7.3 µg/L; DEQ SLV, surface water; DEQ 2001) at concentrations up to 64 µg/L at RW-1 during the October 2003 event (Figure 7-33) and up to 50 µg/L at OX-2S during the November 2004 event (Figure 7-34).

7.2.2.2 Lower Zone Groundwater

Groundwater samples collected from 36 lower zone permanent monitoring wells during quarterly events from spring 1997 through November 2004 were evaluated for this report. Groundwater samples were also collected from permanent monitoring wells and temporary well points located on the former PEO property that are likely representative of the lower zone groundwater. As described earlier in Section 7.2.2.1, hydrogeologic data collected at the Bell Terminal and on the adjacent former PEO property indicate that the upper zone is discontinuous in the western portion of the Main Terminal Tank Farm area and on the former PEO property to the west of the western property boundary of the Bell Terminal Tank Farm area, as shown on Figure 6-1. Therefore, groundwater data from monitoring wells on the former PEO property, except for wells MW-4 and MW-14, presumably represent groundwater elevations and groundwater concentrations comparable to the lower zone beyond the extent of the confining unit at the Terminal. For purposes of discussion and because the most recent Phase III RI well installation occurred in fall 2004, presentation of lower zone groundwater data from the Terminal for this report is focused on data collected for the fourth quarter 2003 event (including groundwater data collected from temporary well points from 1996 through 2002) and the fourth quarter 2004 event. Trends in contaminant concentrations for quarterly data collected since 1997 or since well installation are evaluated and discussed in Section 7.2.3. A discussion of the distribution of contaminants in the lower zone groundwater by area for October 2003 and November 2004 is provided below. Groundwater data collected from temporary well points in 2001 during the planning stages for the Phase III RI and on the former PEO property between 1996 and 1998 (for TPH constituents) and in January 2003 (for BTEX) are also included with the October 2003 data. TPH data has not been collected on the former PEO property since the 1996 and 1998 events and the BTEX data from January 2003 is the most recent data available.

Main Terminal Tank Farm Area

Eight of the lower monitoring wells located in the Main Terminal Tank Farm area were installed in fall 2003. An additional seven wells were installed in October-November 2004, including the four wells located along the shoreline of the Willamette River, and the replacement well for LW-4D (LW-4DR). Therefore, the distribution of contaminants and contaminant trends in upper zone groundwater within the Main Terminal Tank Farm area are based on a maximum of five quarters of data,

collected between October 2003 and November 2004. In addition to the quarterly data, four groundwater samples were collected from temporary well points from August through October 2001 and in July 2002 for determining the locations of permanent monitoring wells. These data are presented with the October 2003 results because this was the first quarter when the Phase III wells were sampled.

The results indicate that contaminants are present in the lower zone groundwater along the western portion of the Main Terminal Tank Farm area where the confining unit is discontinuous or not present and where the upper and lower groundwater zones converge. In this area, diesel-range petroleum hydrocarbon concentrations ranged from less than the laboratory reporting limit (i.e. nondetect) to 3.1 mg/L in October 2003 (Figure 7-37) with a maximum concentration of 6.57 observed at temporary well point GW12-1 in 2001, and ranged from nondetect to 3.91 mg/L in November 2004 (Figure 7-38). Gasoline-range petroleum hydrocarbon concentrations ranged from nondetect to 0.92 mg/L in October 2003 (Figure 7-39) with a maximum of 2.92 mg/L observed at temporary well point GW16-1 in 2001, and ranged from nondetect to 3.83 mg/L in November 2004 (Figure 7-40), but no concentrations exceeded the preliminary screening level (12 mg/L; DEQ RBC, construction and excavation worker; DEQ 2003b). Gasoline-related compounds (e.g., benzene and ethylbenzene) also have not been detected in the lower zone groundwater at the Main Terminal Tank Farm area at concentrations exceeding the preliminary screening levels. In October 2003, benzene concentrations ranged from nondetect to 40 µg/L [below the preliminary screening level of 51 µg/L; Oregon AWQC for fish consumption only (DEQ 2004b) and National AWQC for organisms only (EPA 2002); Figure 7-41]. Concentrations of benzene were lower in November 2004 with a maximum concentration of only 12.1 µg/L (Figure 7-42). In October 2003, ethylbenzene was only detected at monitoring well R and recovery well RW-2 at concentrations of 3.8 and 2.6 µg/L, respectively (below the minimum preliminary screening level of 7.3 µg/L; DEQ SLV, surface water; DEQ 2001; Figure 7-43). In November 2004, ethylbenzene was detected only at well RW-2 at a concentration of 2.06 µg/L (Figure 7-44).

Within the eastern portion of the Main Terminal Tank Farm area, where the confining unit is present, there have been fewer detections of contaminants in the lower zone groundwater. Diesel-range petroleum hydrocarbons have been detected most frequently; however, the concentrations are low (ranging from 0.4 mg/L to 2.2 mg/L in October 2003 and 0.263 to 3.13 mg/L in November 2004; Figures 7-37 and 7-38, respectively). Gasoline-range petroleum hydrocarbons were only detected in October 2003 at wells LW-26D and RW-2 (Figure 7-39) and in November 2004 at wells LW-26D, LW 27D, and RW-2 (Figure 7-40) at concentrations ranging between 0.188 to 1.23; however none of the concentrations exceeded preliminary screening levels.

No product has been observed in the lower zone.

PCP is present in the lower zone groundwater, but only in the very southern portion of the Main Terminal Tank Farm area, and is the result of downgradient migration from the Phase II study area.. Also, the highest concentrations of benzene and ethylbenzene in the eastern portion of the Main Terminal Tank Farm area for the lower zone groundwater (and typically the only occurrences) are at recovery well RW-2 (Figures 7-41 through 7-44). Because RW-2 has been recovering PCP-impacted groundwater in this area since the fall of 2000, the presence of benzene and ethylbenzene at this location could be due to the draw of these constituents from the tank farm area toward the pumping well. Additional discussion of the PCP concentrations downgradient of the Phase II study area is included in the Phase II Area section below.

Detected concentrations of metals, including chromium, copper, lead, nickel, and zinc are present at concentrations exceeding the preliminary screening levels within the Main Terminal Tank Farm area at concentrations up to 0.93 mg/L for zinc at well LW-35D in October 2003. These metals concentrations could be the result of dissolution of metals under reducing conditions enhanced by the presence of petroleum constituents in the lower zone, as discussed in Section 7.2.3.

As shown in Table 7-1 and on Figure 7-47, groundwater results for the Willamette River shoreline wells collected during November 2004, February 2005, and June 2005 (results from 2005 events are provided in their entirety in separate deliverables; Landau Associates 2005c, d) indicate that, with the exception of chromium in wells LW-37D, LW-38D, and LW-39D and copper in well LW-37D in November 2004, no concentrations exceeded the preliminary screening levels. These data demonstrate that, even though there is a physical groundwater transport pathway from the upland areas of the terminal to the river, facility-related groundwater contaminants are not currently reaching the river at concentrations above applicable screening level values. Therefore, there is not a complete exposure pathway to potential receptors in the Willamette River via groundwater for these contaminants at concentrations above applicable screening levels. Groundwater concentrations in the shoreline wells will be confirmed during a full year of groundwater monitoring.

Bell Terminal Tank Farm Area

Three permanent monitoring wells were installed in the lower zone within the Bell Terminal Tank Farm area in fall 2003. In addition, groundwater data were collected in 1996 and 1998 (for TPH) and January 2003 (for BTEX) from locations on the adjacent former PEO property. The data from the Bell Terminal Tank Farm area and the former PEO property were used to evaluate the distribution of contaminants in the lower zone groundwater within the Bell Terminal Tank Farm area.

The results indicate that, except for diesel-range petroleum hydrocarbons and metals, contaminants are not detected in the lower zone groundwater in the Bell Terminal Tank Farm area

(Figures 7-37 to 7-46). Low concentrations of diesel-range petroleum hydrocarbons were detected ranging from 0.319 to 0.6 mg/L within the Bell Terminal Tank Farm area (Figures 7-37 and 7-38). As stated earlier, groundwater concentrations on the former PEO property to the west of the approximate confining unit boundary where the confining unit appears to be discontinuous are presumably representative of lower zone concentrations. In the area where the confining unit is presumably not present on the former PEO property, elevated concentrations of diesel-range petroleum hydrocarbons, and gasoline-range petroleum hydrocarbons and ethylbenzene exceeding preliminary screening levels are observed, as shown on Figures 7-37, 7-39, and 7-43. Diesel-range hydrocarbons are observed at concentrations ranging from 1.33 to 35 mg/L, with the maximum concentration (as total TPH) occurring at direct-push location G (Figure 7-37). Gasoline-range petroleum hydrocarbon concentrations range from 3.1 to 44.5 mg/L, with the maximum concentration (as total TPH), occurring at direct-push location B-9 (Figure 7-39). Benzene concentrations were nondetect for the wells sampled on the PEO property in January 2003 (Figure 7-41), but ethylbenzene concentrations were detected at concentrations up to 1,500 µg/L at well MW-5, which is located about 275 ft downgradient of the Bell Terminal Tank Farm boundary (Figure 7-43). Because the confining unit boundary is estimated within the likely source area where the former diesel ASTs were located on the eastern portion of the PEO property, the elevated groundwater concentrations in this area could reflect groundwater contamination resulting from direct releases to soil where the confining unit is not present or downgradient flow of contaminated groundwater from the upper zone across the confining unit boundary. However, in the latter case, concentrations would typically decrease instead of increase in the downgradient direction. No groundwater data are available for the former PEO property in 2004.

Metals concentrations at the three lower zone wells within the Bell Terminal (LW-29D, LW-30D, and LW-32D) exceeded preliminary screening levels for chromium, copper, nickel, and zinc. As indicated earlier, metals concentrations in the lower zone may be the result of reducing conditions enhanced by the presence of petroleum hydrocarbons.

Loading Rack/Entrance Area of the Main Terminal

No lower zone groundwater monitoring wells exist in the loading rack/entrance area of the Main Terminal.

Eastern Portion of the Phase III Study Area

No lower zone groundwater monitoring wells exist in the eastern portion of the Phase III study area.

Asphalt-Paved Road Area

Only one upper zone monitoring well (LW-10S) and one lower zone monitoring well (LW-10D) exist in the asphalt-paved road area. Since February 2004 and several times prior, LW-10S has been dry during quarterly sampling events. The lack of groundwater is interpreted to be due to the well's location near the confining unit boundary. For both LW-10S and LW-10D, PCP and metals were the only analytes detected in the groundwater from these wells. In LW-10D, PCP was detected at a concentration of 0.94 µg/L in October 2003, which is less than the preliminary screening level, but PCP was not detected at this location in November 2004. The intermittent detections of PCP at this location are interpreted to represent seasonal variability in the downgradient extent of the PCP plume in the lower zone, as discussed previously. The metals detected include arsenic, chromium, copper, lead, and zinc. All but zinc and arsenic were detected at concentrations exceeding the preliminary screening levels with a maximum concentration of 0.0233 for chromium in November 2004.

Phase II Area

The analytical results for groundwater samples collected at six permanent monitoring wells located in the Phase II area were used to evaluate the distribution of contaminants in the lower zone groundwater within the Phase II area. PCP was detected at two wells (LW-3D and OX-8D) at concentrations less than 1 µg/L in October 2003, but not at concentrations exceeding preliminary screening levels (Figure 7-45). PCP was not detected at these wells in November 2004 (Figure 7-46). PCP is also in lower zone groundwater in the very southern portion of the Main Terminal Tank Farm area, and is the result of downgradient migration from the Phase II study area. The concentrations of PCP ranged from nondetect to 8.1 µg/L in October 2003 (Figure 7-45) and nondetect to 2.12 µg/L in November 2004 (Figure 7-46). The maximum PCP concentration during both events occurred at recovery well RW-2 during the October 2003 event and is the only concentration of PCP in the lower zone groundwater that exceeds the preliminary screening levels. The distribution of the PCP plume in the lower zone reflects the influence of the pumping of recovery well RW-2. Diesel-range petroleum hydrocarbons (Figures 7-37 and 7-38) have also been detected in this area at LW-11D at concentrations up to 0.66 during the October 2003 event. Other petroleum-related constituents (e.g., gasoline-range petroleum hydrocarbons, benzene, and ethylbenzene) have also been detected but none at concentrations exceeding preliminary screening levels. Metals, including lead, chromium and copper were also detected at concentrations exceeding preliminary screening levels with a maximum observed concentration of 0.0305 mg/L (chromium at well OX-8D).

7.2.3 METALS EVALUATION

The presence of metals exceeding preliminary screening levels in lower zone groundwater was assessed to determine whether the concentrations could be attributed to greater overall background concentrations for metals in the lower zone, to dissolution of metals under reducing conditions resulting from the biodegradation of petroleum constituents accompanied by the consumption of soluble and solid phase electron acceptors (Chapelle et. al. 2002) or natural conditions, or to possible turbidity in the samples. Metals concentrations in lower zone groundwater within the Main Terminal and Bell Terminal tank farm areas (and in upper zone groundwater for chromium only in the Bell Terminal tank farm area) exceed preliminary screening levels; however, the concentrations of petroleum constituents are significantly greater within the Main Terminal tank farm area than in the Bell Terminal.

Site-specific background concentrations for metals in upper and lower zone groundwater were determined previously during the Phase I/II COPC/CPEC screening process based on data from upper zone wells located on the East Property (Landau Associates 1999a). Except for arsenic and lead, the preliminary screening levels were greater than the background concentrations. Also, metals concentrations in lower zone groundwater in upgradient portions of the Phase II area (wells LW-1D and LW-3D) are less than the preliminary screening levels, indicating that the metals concentrations observed within the tank farm areas are likely not related to background concentrations.

Turbidity has typically been measured during the quarterly sampling events in each well sampled. The groundwater sampled from the wells is mostly free of suspended material; however, if suspended material is observed, a request is made to the laboratory to not disturb the sample and extract from the supernatant portion. Comparisons of turbidity measurements with metals concentrations did not indicate a direct correlation between these parameters. Also, both dissolved and total metals analyses were conducted on the shoreline wells during the first quarter 2005 event (to be provided in a separate deliverable). The results indicate that there is not a significant difference between the dissolved and total metals concentrations and, therefore, turbidity is unlikely the cause for the presence of metals concentrations observed in the groundwater samples.

Dissolved oxygen measurements have been collected on a quarterly basis as part of the routine groundwater sampling events. However, the methodology used for collecting measurements (e.g., post-purge) may not provide reliable information for redox conditions. Therefore, based on the available information, it is not possible at this time to determine whether the metals concentrations reflect natural or petroleum constituent – induced reducing conditions or some other condition, based on metals concentrations exceeding preliminary screening levels in the upper zone at the Bell Terminal and within

the lower zone within both tank farm areas. As part of the development of a source control evaluation approach (see Section 9.4), monitored natural attenuation parameters (e.g., dissolved oxygen, oxidation-reduction potential, pH, conductivity, temperature) are being measured on a monthly basis from June to December 2005 using pre-purge, downhole techniques. This information will be used to assess whether there is a correlation between the metals concentrations with redox conditions at the terminal. The results of this assessment will be provided in a source control evaluation document.

7.2.4 CONTAMINANT TRENDS

Contaminant trends were evaluated based primarily on groundwater data collected during the quarterly events between October 2003 and November 2004. The detected concentrations are shown in comparison to the preliminary screening values for these events by area in Appendix D. Trends of contaminant concentrations were evaluated using time versus groundwater elevation and time versus concentration plots for the period covered by the quarterly sampling events: October 2003 through November 2004 for the Phase III wells, March 1996 through November 2004 for most of the Phase II wells, and February 1999 through November 2004 for well LW-8S.

Results of the contaminant trend evaluation for the upper and lower zones are provided by RI area below. The contaminant trend discussion focuses on the selected COIs discussed in Section 7.2.1. Long-term trends in the upper and lower zones will continue to be evaluated as part of the quarterly monitoring events.

7.2.4.1 Main Terminal Tank Farm Area

The five quarters of data collected from the Phase III wells between October 2003 and November 2004 were used to evaluate contaminant trends within areas of the terminal used historically for petroleum operations in the Main Terminal Tank Farm area. Plots of petroleum hydrocarbons (diesel- and gasoline-range) for selected upper and lower zone wells; plots of diesel-range and gasoline-range petroleum hydrocarbons, benzene; and ethylbenzene including groundwater elevation and Willamette River stage (lower zone wells only) for one upper zone well (LW-8S) and selected lower zone wells (LW 23D and LW-25D) in the Main Terminal Tank Farm area are shown on Figures 7-49 through 7-55. Plots of diesel- and gasoline-range petroleum hydrocarbon concentrations versus groundwater elevation for paired wells in the Main Terminal Tank Farm area (LW-20S/D) are shown on Figure 7-56.

Concentrations of diesel- and gasoline-range petroleum hydrocarbons in the samples from the upper and lower zone wells within the Main Terminal Tank Farm area generally decreased or were similar to those detected during previous quarters, with the exception of gasoline-range petroleum

hydrocarbon concentrations in wells LW-23D and LW-25D. The diesel-range petroleum hydrocarbon concentrations in the upper zone within the Main Terminal Tank Farm area have ranged between about 3 to 12 mg/L, with the highest concentrations detected at well LW-20S during four of the five quarters (Figure 7-49). Gasoline-range petroleum hydrocarbon concentrations in the upper zone within the Main Terminal Tank Farm area are consistently highest at well LW-8S with concentrations over time ranging from greater than 4 to 15 mg/L since this well was first sampled in May 1999 (Figures 7-50 and 7-51). Concentrations of diesel-range petroleum hydrocarbon concentrations in the lower zone within the Main Terminal Tank Farm area tend to be significantly greater than gasoline-range petroleum hydrocarbon concentrations at the same locations over time (Figures 7-52 and 7-53), but less overall than the upper zone concentrations for these constituents (Figures 7-49 and 7-50). Also, petroleum hydrocarbon concentrations in groundwater from the lower zone wells located beyond the extent of the confining unit in the Main Terminal Tank Farm area tend to be greater than from wells farther to the east where the confining unit is present. This is likely the result of upper zone groundwater with higher petroleum hydrocarbon concentrations mixing with lower zone groundwater downgradient of the confining unit boundary. The highest concentration of diesel-range petroleum hydrocarbons detected since quarterly monitoring began at these wells occurred at well LW-25D in February 2004 (about 6.7 mg/L; Figure 7-52). The gasoline-range petroleum hydrocarbon concentrations for the lower zone wells in the Main Terminal Tank Farm area showed similar overall trends to the diesel-range concentrations, except at wells LW-23D and LW-25D where the gasoline-range petroleum hydrocarbon concentrations slightly increased (Figures 7-52 and 7-53).

Upper zone well LW-27S has contained product during three of the last four quarters ranging in thickness from 0.69 ft in February 2004 to 0.02 ft in November 2004. Also, during the last four quarters, measurable product was observed at LW-21S at thicknesses ranging from 1.03 ft in February 2004 to 0.11 in November 2004. A product thickness of 0.24 ft was observed at well Q in October 2003 and again in November 2004 at a thickness of 0.25 ft, but not during the other 2004 groundwater sampling events. Based on information collected for the Phase III RI, the potential sources of product within the Main Terminal Tank Farm area include a diesel spill resulting from the rupture of Tank 29508 in 1975; an unleaded gasoline spill in the vicinity of wells N, P, and Q in 1994; and, to a lesser extent, incidental leakage along conveyance pipelines. The two distinct diesel-range petroleum hydrocarbon plumes in the upper and lower zones (Figures 7-27, 7-28, 7-37 and 7-38) and the ethylbenzene plumes in the upper zone (Figure 7-33 and 7-34) within and near the southeast corner of the Main Terminal Tank Farm area represent groundwater concentrations associated with separate historic activities conducted at the Terminal. The plumes to the west including upper zone monitoring location LW-8S and the other Main Terminal Tank Farm area wells are likely associated with spills related to former petroleum operations

within the Main Terminal Tank Farm area. The plumes to the east, including monitoring locations RW-1 and LW-11S in the upper zone and B2 and RW-2 in the lower zone, are likely associated with carrier oils used with PCP during wood treatment formulation activities within the former PCP mixing area. This interpretation is supported by the results for the product sample collected from well LW-11S in November 2000, which contained 3.2 percent PCP in addition to other petroleum constituents, versus the results for the product samples collected from wells LW-21S and LW-27S in April 2004 (Landau Associates 2004c), which contained only petroleum hydrocarbon constituents (e.g., gasoline-, diesel-, and motor oil-range petroleum hydrocarbon). The plumes in the area around well LW-8S are considered to be associated with the former petroleum operations in the Main Terminal Tank Farm area because upper zone groundwater flow in this area appears to be to the south-southwest (Figures 6-14 and 6-15) and constituents originating in the former PCP mixing area (e.g., PCP) have not been detected at well LW-8S.

Benzene and ethylbenzene concentrations for the upper zone are presented on Figures 7-31 through 7-34, and those for the lower zone are presented on Figures 7-41 through 7-44. In general, the overall distribution of these compounds remained unchanged between October 2003 and November 2004 quarters based on the available data. Upper zone monitoring wells N and Q that contained concentrations of benzene and ethylbenzene exceeding the preliminary screening levels were not sampled in August 2004 because either the well was dry (well N) or contained product (well Q). Benzene concentrations at lower zone monitoring location LW-23D located on the riverbank to the west of the Main Terminal Tank Farm area continued a decreasing trend to 12.1 µg/L in November 2004 following the high detection during the second quarter 2004 sampling event (132 µg/L) (Figure 7-54). Recovery well RW-2 has consistently contained concentrations of benzene above the laboratory reporting limit since February 2002, which, as discussed above, is likely in response to capture caused by pumping of the well. The only other detections of benzene observed in the lower zone were single occurrences at wells LW-22D, LW-26D, LW-45D, LW-4DR, mainly during the November 2004 event, but all were less than the preliminary screening levels. Ethylbenzene has only been detected at RW-2, except for a single occurrence in well R in October 2003, but all concentrations have been less than the preliminary screening level.

Comparison of the diesel- and gasoline-range petroleum hydrocarbon, benzene, and ethylbenzene concentrations with groundwater elevations at selected well locations in the Main Terminal Tank Farm area indicates that groundwater concentrations in the upper zone wells are likely influenced by seasonal fluctuations in groundwater levels, as demonstrated by the long-term data from well LW-8S (Figure 7-51). At well LW-8S, the diesel-range petroleum hydrocarbon concentrations appear to be increasing over time, benzene concentrations are decreasing, and gasoline-range petroleum hydrocarbon and ethylbenzene concentrations have stayed relatively constant since about February 2002. At lower

zone wells LW-23D and LW-25D (Figures 7-54 and 7-55), groundwater elevations correlate with river stage fluctuations, as expected; however, any trend in groundwater concentrations in response to fluctuations in groundwater level or river stage is not apparent from the available data. Diesel-range petroleum hydrocarbon concentrations at well pair LW-20S/-20D in the Main Terminal Tank Farm area indicate that the concentrations in the upper and lower zones for this constituent are relatively similar, and are all less than 1.0 mg/L (Figure 7-56). Also, there does not seem to be a direct correlation between diesel-range petroleum hydrocarbon concentrations and groundwater levels at these wells based on the available data.

7.2.4.2 Bell Terminal Tank Farm Area

The five quarters of data collected from the Phase III wells between November 2003 and November 2004 were used to evaluate contaminant trends within the Bell Terminal Tank Farm area. The direct-push results collected between 1996 and 2001 at locations on the former PEO property and in the planning stages for the Phase III RI within the Bell Terminal were also evaluated (Figures 7-27 through 7-36). Plots of petroleum hydrocarbons (diesel- and gasoline-range); benzene; and ethylbenzene including groundwater elevation at upper zone well (LW-32S) in the Bell Terminal Tank Farm area are provided on Figures 7-57 through 7-59. Plots of diesel- and gasoline-range petroleum hydrocarbon concentrations versus groundwater elevation for paired wells in the Bell Terminal Tank Farm area (LW-30S/D) are shown on Figure 7-60.

Concentrations of diesel- and gasoline-range petroleum hydrocarbons in the samples from the upper and lower zone Phase III wells were generally less or were similar to those detected during previous quarters, with the exception of gasoline- and diesel-range petroleum hydrocarbons concentrations at well LW-32S. Petroleum hydrocarbon concentrations in samples from these wells increased slightly in November 2004.

In the Bell Terminal Tank Farm area, diesel-range petroleum hydrocarbon concentrations in the upper zone are slightly greater than the gasoline-range concentrations, with the highest concentrations for both constituents occurring in November 2004 at LW-32S (4.44 mg/L for diesel-range petroleum hydrocarbons and 2.87 mg/L for gasoline-range petroleum hydrocarbons; Figures 7-57 and 7-58); however, the gasoline-range concentrations did not exceed preliminary screening levels. (A preliminary screening level was not established for diesel-range petroleum hydrocarbons, as discussed above). Similar or lower concentrations of both of these constituents were detected in the other upper zone wells between the third and fourth quarters of 2004. (Note that well LW-33S was dry during the October 2003 and November 2004 events; LW-28S was dry during the October 2003, August 2004, and November

2004 events, and new well LW-41S was dry in November 2004.) Lower zone groundwater concentrations in the Bell Terminal Tank Farm area for these constituents are much less than the upper zone concentrations, as shown on Figures 7-37 through 7-40. Also, diesel- and gasoline-range petroleum hydrocarbon concentrations are much less in the upper zone groundwater in the Bell Terminal Tank Farm area than in the Main Terminal Tank Farm area (Figures 7-27 through 7-30).

As shown on Figure 7-59, concentrations of benzene and ethylbenzene in upper zone well LW-32S have remained relatively constant over time and there is no apparent correlation between groundwater concentrations and groundwater levels based on the available data. Also at this well, the diesel-range petroleum hydrocarbon concentration increased slightly from 4.24 to 4.44 mg/L, and the gasoline-range petroleum hydrocarbon concentration increased slightly from 1.33 to 2.87 mg/L between the August and November 2004 events. At well pair LW-30S/LW-30D, trends in diesel-range petroleum hydrocarbon concentrations and groundwater levels at lower zone well LW-30D do not correlate; however, there may be some correlation at upper zone well LW-30S (Figure 7-60). Diesel-range petroleum hydrocarbon concentrations have been slightly greater in the upper zone than the lower zone at this well pair, except in the data from the third quarter 2004 sampling event.

7.2.4.3 Loading Rack/Entrance Area of the Main Terminal

The analytical results for groundwater samples collected from monitoring well LW-7S were used to evaluate the contaminant trends in the upper zone groundwater within the loading rack/entrance area (Figure 7-61). Based on these results, the concentrations of diesel- and gasoline-range petroleum hydrocarbons, benzene, and ethylbenzene have remained relatively constant over time, except for fluctuations that appear to be related to seasonal fluctuations in groundwater elevations. The diesel-range petroleum hydrocarbon concentration observed in June 2001 (20 mg/L) appears to be anomalous based on the historical data and may be a laboratory recording error. Benzene was not detected at this location.

No lower zone groundwater monitoring wells exist in the loading rack/entrance area of the Main Terminal Tank Farm area.

7.2.4.4 Eastern Portion of the Phase III Study Area

No permanent monitoring wells are located in this area.

7.2.4.5 Asphalt-Paved Road Area

Only one upper zone well (LW-10S) and one lower zone well (LW-10D) exist in the asphalt-paved road area. Since February 2004 and several times prior, LW-10S has been dry during quarterly

sampling events. The lack of groundwater is interpreted to be due to the well's location near the confining unit boundary. For both LW-10S and LW-10D, only PCP and metals have been detected in the groundwater at these locations. The detections of PCP at LW-10D have occurred sporadically, but the concentrations typically do not exceed 1 µg/L or the preliminary screening level [3.0 µg/L; Oregon AWQC for aquatic species (DEQ 2004b) and National AWQC for organisms only (EPA 2002)]. Metals concentrations have remained relatively consistent over time.

7.2.4.6 Phase II Study Area

In addition to analytical data associated with the groundwater interim action and ISCO activities, the quarterly groundwater data from the Phase II wells were used to evaluate long-term groundwater level and contaminant trends for groundwater impacted by former PCP-related operations at the Terminal. PCP concentrations were evaluated by generating time versus groundwater elevation and time versus concentration plots for the period covered by the Phase II RI quarterly sampling events (April 1997 or first available after well installation through the current quarterly event). Plots of PCP concentrations (maximum concentrations of either EPA Methods 8270 or 8040 for events prior to the second quarter 2001 event) versus time for selected upper zone wells (LW-4S, LW-11S, LW-13S, and RW-1) and selected lower zone wells (LW-4D, LW-11D, and RW-2) are provided on Figures 7-62 and 7-63. Plots of groundwater elevations and PCP concentrations for upper zone wells LW-4S and LW-11S are shown on Figures 7-64 and 7-65. Figure 7-66 shows groundwater elevations and PCP concentrations at lower zone well LW-11D plotted with the Willamette River stage through the August 2004 event as mentioned earlier. In addition, PCP concentrations from the fourth quarter (October) 2003 and fourth quarter (November) 2004 events for the upper and lower water-bearing zones are shown on Figures 7-35, 7-36, 7-45, and 7-46 and discussed above.

As shown on Figure 7-62, the PCP concentrations at the selected upper zone wells show variable concentration trends over time. PCP concentrations at RW-1 have continued to decrease since February 2004 and the PCP concentration for November 2004 (123 µg/L) is the lowest observed at this location since November 2002, but is still above the historic low observed during November 2001 (17 µg/L). PCP concentrations at well LW-11S also have continued to decrease since February 2004 (from 2,130 to 184 µg/L), and the PCP concentration in November 2004 is the lowest observed at this location since well installation in 1999. Historically, PCP concentrations detected at well LW-11S appear to reflect a response to seasonal groundwater fluctuations, as shown on Figure 7-65. PCP concentrations at LW-13S have typically been reported at less than 1 µg/L since the fourth quarter 2001 event; PCP was not detected at LW-13S during the November 2004 event, but the laboratory reporting limit increased to 4.92U µg/L. PCP concentrations at well LW-4S appear to reflect

seasonal changes in groundwater elevation and resulting changes in PCP concentrations at upgradient locations (Figure 7-64). The overall reductions in PCP concentrations at monitoring wells within and downgradient of the former PCP mixing area appear to be due to the July 2004 ISCO injection event. Further discussion on the impact of the ISCO injection event on the PCP plume is provided in Section 2.2.2.7.

As shown on Figure 7-63, the PCP concentration in the lower zone at RW-2 has continued to decrease since the May 2004 event (from 46.7 to 2.12 µg/L), but is still greater than the historic low PCP concentration recorded at this well in June 2001 (0.68 µg/L). Historically, PCPs have been detected sporadically in both LW-11D and G1A; however, during the November 2004 event, PCP was not detected in either well.

Fluctuations in groundwater elevations in the upper zone reflect typical seasonal variability with seasonal lows during the fall months (October-November) and seasonal highs during the winter and early spring months (January-March) based on water levels measured in the Phase II wells since monitoring began in March 1997. The groundwater levels during the past year are similar to those observed during 2000 and 2002. The trends in PCP concentrations correlate with groundwater elevations at some locations. Figure 7-64 shows that there appears to be a correlation between the water level and PCP concentration in the upper zone at well LW-4S since the first quarter of 2002. Figure 7-65 shows that the PCP concentration in the upper zone at well LW-11S generally follows the water level trends in that zone over time. In the lower zone, groundwater levels show trends similar to the seasonal fluctuations in the Willamette River, as shown by the plot of groundwater elevations at LW-11D with river stage on Figure 7-66. However, no correlation is apparent between PCP concentrations and groundwater/river stage elevations at LW-11D.

PCP concentration contours for the upper and lower water-bearing zones (Figures 7-35, 7-36, 7-45 and 7-46) indicate that the overall extent of the PCP plume has narrowed and that the PCP concentrations are significantly lower for the samples collected between October 2003 and November 2004 at all well locations, except for wells LW-4S and OX-2S. This reduction appears to be due to effects from the ISCO injection event, as discussed in Section 2.2.2.7. The sample from monitoring well OX-2S, which is located downgradient of the former PCP mixing area, contained the highest concentration of PCP (1,150 µg/L) for the upper zone wells in November 2004. For the lower zone wells, RW-2 and LW-4DR were the only locations where PCP was detected, as noted earlier. The detected concentrations were all less than the preliminary screening level of 3.0 µg/L [Oregon AWQC for aquatic species (DEQ 2004b) and National AWQC for organisms only (EPA 2002)].

7.3 OBSERVATIONS OF NAPL, SHEENS, AND ODORS

The presence or absence of NAPL, sheens, and odors in the soil was monitored during the drilling for soil borings and monitoring wells, and during Phase II CPT explorations. The presence of free product (i.e., LNAPL) on the water table was also checked as part of the quarterly measurement of water levels.

7.3.1 SOIL

The presence of NAPL, sheens, and odors within the soil at the Terminal was used to identify potentially impacted soil conditions. NAPL was observed at one location during drilling: LW-27S at a depth of 22.5 ft BGS. Within the Main Terminal Tank Farm area, slight to heavy sheen was observed on soil at depths ranging between 3.5 to 34 ft BGS during drilling and sample collection. This sheen was observed in soil borings LW-19S, LW-20S, LW-21S, LW-26D, N, P, and Q located within the northern portion of the Main Terminal Tank Farm area and in one soil boring, LW-17D, located in the southern portion of the Main Terminal Tank Farm area.

Diesel- and/or petroleum-like odors in the soil were noted during drilling of 26 borings within the Main Terminal Tank Farm area. At two of these locations, P and Q, the odors resembled strong gasoline and at one location, G14-1, the odor resembled a mild ethanol. At soil borings for monitoring wells R and LW-35D, non-petroleum-like odors were noted from 15 to 29.5 ft BGS. These odors were described as faint, sweet, and soap-like at soil boring R and as a mild, rotten sewer-like odor at soil boring LW-35D.

Within the Bell Terminal Tank Farm area, slight to strong sheen was observed at depths ranging between 12.5 to 19.5 ft BGS. The sheen was observed at one location along the east-west trending pipeline (BT-05), at two locations within the central portion of the Bell Terminal (LW-32S/-32D and at soil boring G25-1), and at soil boring LW-30S located along the western property fence line. Slight to strong diesel- or petroleum-like odors were noted in the soil during drilling at 18 soil borings. At two of these locations, LW-28S and LW-31S, the odors were described as mild gasoline-like odors.

Within the Phase II study area, slight to heavy sheen was observed on soil at depths ranging between 0.5 to 19.5 ft BGS. The sheen was observed in soil borings LB-2, LB-12, LB-13, LB-14, LB-17, LB-25, LW-2S, LW-8S, and RW-3. Slight to strong hydrocarbon odors were noted in the soil at 24 soil borings. At the soil borings for injection wells OX-6S, OX-7S, OX-8S, and OX-8D, monitoring wells LW-11S and LW-11D, and recovery well RW-3, the odors were described as strong, mineral-spirit-like odors. A summary of NAPL, sheen, and odor observations in soil is provided in Table 7-2.

7.3.2 GROUNDWATER

An evaluation of LNAPL observations documented since August 1993 indicates that LNAPL of varying thickness (0.01 to 1.2 ft) has been observed in upper zone groundwater monitoring wells N, P Q, LW-8S, LW-21S, and LW-27S, located within the Main Terminal Tank Farm area, and at location GW8-1 (Figure 2-7) in the Main Terminal Tank Farm area during the preliminary evaluation. The presence of LNAPL in the Main Terminal Tank Farm area is likely related to spills of petroleum products in this area.

Occasional observations of LNAPL have also been recorded for upper zone groundwater monitoring wells within the Phase II Study area. These wells include OX-1S, OX-2S, OX-3S, and LW-11S and piezometer PZ-2. LNAPL thicknesses at these locations ranged from 0.04 to 0.37 ft. Each of these wells is located within the PCP plume area. Based on the PCP content in a LNAPL sample collected at LW-11S, LNAPL observed within the Phase II area is related to historical spills associated with the PCP mixing area and unrelated to activities within the Main Terminal Tank Farm area. As discussed in Section 7.3.2, the variability in the presence of LNAPL in the Phase II area appears to be related to seasonal fluctuations in the water table. No LNAPL was observed in the upper zone groundwater in the Bell Terminal Tank Farm area, the eastern portion of the Phase III study area, or the asphalt-paved area during past groundwater sampling events.

Except for a slight sheen and a slight to moderate mineral spirits-like odor during the first sampling of well B2 in August 1993, no NAPL or odors have been reported for the lower zone groundwater at the Terminal.

A summary of LNAPL observations in groundwater is provided in Table 7-3.

8.0 CONCEPTUAL SITE MODEL

This section provides the conceptual site model for the Terminal based on the hydrogeologic/geologic system and the RI and previous investigation data presented in this report. The conceptual site model includes a description of the defined source areas; a discussion of the general release mechanisms and fate and transport processes, and site-specific fate and transport processes along the exposure pathways for the Terminal. The conceptual site model demonstrates that the existing data are sufficient to define the nature and extent of contamination from the defined source areas and to conduct the human health and ecological risk assessments.

8.1 SOURCE AREAS

Sources that have affected soil and groundwater quality at the Terminal were related to separate historical operations, including: 1) a wood treatment formulation operation in the former PCP mixing area and former PCP warehouse area; 2) petroleum handling and storage in the Main Terminal and the Bell Terminal Tank Farm areas, and associated loading rack and petroleum handling areas; 3) storage of waste oils in tanks in the former Crosby & Overton area; 4) oiling of roads on the East Property; and 5) unknown sources along the western property boundary of the Bell Terminal Tank Farm area outside the tank farm wall and on the adjacent former PEO property to the west. Contamination to soil on the East Property has been addressed through a soil remedial action and the soil to groundwater pathway has been effectively eliminated. DEQ has issued a conditional NFA for the East Property portion of the Terminal and further discussion of the conceptual site model is focused on the other areas of the Terminal.

8.1.1 FORMER PCP MIXING AREA AND WAREHOUSE

The primary contaminant of concern resulting from the historical blending of specialty wood treating products is PCP. Two source areas for PCP-related contamination (e.g., PCP by-products and dioxins/ furans) were defined in the Phase II RI. These areas are the former PCP mixing area (including the area below the former PCP warehouse) and the northwestern portion of former Crosby & Overton tank area. As discussed in the Phase II RI report, releases of PCP, carriers, additives, and PCP formulations to soil in the PCP mixing area appear to have occurred during the mixing operations. These releases resulted in the primary source of PCP (and related constituents) contamination to soil in this area with historical PCP soil concentrations exceeding 100,000 mg/kg. Based on historical upper and lower zone groundwater data, the former PCP mixing area was also identified as a significant or primary source of PCP contamination to groundwater with historical concentrations in the upper zone exceeding

60,000 µg/L. PCP concentrations detected in the lower zone have been as high as 18,000 µg/L. Based on the magnitude of PCP detections in the soil and groundwater in and downgradient of the PCP source area and information about the PCP formulations, there is the possibility that free-phase PCP (dense non-aqueous phase liquid (DNAPL)) with a carrier was used, providing a potential residual source of PCP. However, to date, there has been no direct observation of DNAPL at the Terminal.

Contaminated soil was removed from the former PCP mixing area and below the footprint of the former PCP warehouse during a soil removal action in the fall of 2002. Where possible, soil exceeding PCP concentrations of 5 mg/kg was removed from these source areas for offsite incineration and disposal. However, soil containing PCP concentrations above 5 mg/kg still remain in some areas, mainly at or below the water table, as shown on Figure 2-4. An interim remedial action using the ISCO remediation technique is currently being implemented to address PCP-impacted soil and groundwater both in and downgradient of these source areas.

8.1.2 TANK FARM AREAS

As discussed in Section 7.0, contaminants in soil and groundwater at the Terminal associated with petroleum storage and handling operations include mainly petroleum hydrocarbons, PAHs, VOCs, and metals. The presence of these contaminants is consistent with the historical uses of the Terminal for bulk storage of petroleum products.

Three primary source areas for diesel-range and gasoline-range petroleum hydrocarbon contamination (and related constituents) have been identified on the Terminal property based on concentrations of these contaminants detected in soil and groundwater. These areas include the Main Terminal Tank Farm area, the central portion of the Bell Terminal Tank Farm area, and an area along the western boundary of the Bell Terminal Tank Farm area. Another source area appears to occur downgradient of the Bell Terminal Tank Farm area on the former PEO property where significant historical releases have been documented in the area of the former diesel ASTs. Past releases of petroleum products have been documented in the Main Terminal Tank Farm area. Specifically, a release of diesel occurred in 1975 when Tank 29508 (shown on Figure 2-1) split along a vertical weld. An unleaded gasoline spill in 1994 was also reported in the Main Terminal Tank Farm area. Such releases have provided a source for diesel-range and gasoline-range petroleum hydrocarbons (and related constituents such as PAHs and VOCs) at concentrations exceeding 36,000 mg/kg and 8,000 mg/kg, respectively, in soil and at concentrations exceeding 19 mg/L and 24 mg/L, respectively, in groundwater below the Main Terminal Tank Farm area. Leaks along pipelines conveying petroleum products may have also provided a source for the petroleum hydrocarbon contamination in soil and groundwater in this

area. LNAPL has been observed at locations within the Main Terminal Tank Farm area in the area of the 1994 spill and more recently in the central portion of the Main Terminal Tank Farm area, which is likely related to periodic leaks along conveyance pipelines. To a lesser extent, inadvertent spills near the loading rack and entrance to the Terminal may have occurred during truck loading/unloading and may have provided a source of petroleum products to soil and groundwater in this area.

No past releases in the Bell Terminal Tank Farm area or along the western property boundary of the Bell Terminal have been documented. Documented releases have occurred on the former PEO property located downgradient of the former Bell Terminal Tank Farm area. The western portion of a conveyance pipeline that was used to convey petroleum products was demolished by Schnitzer during construction of the former PEO facility in the mid-1970s while still in use and containing product. This pipeline trends east-west from the northernmost dock on the former PEO property through the center of the Bell Terminal. The demolition resulted in release to soil in an area near the dock; any impacts of the release to other areas is unknown. Additionally, petroleum releases on the former PEO property reportedly occurred near the locations of the former diesel ASTs, where product has consistently been observed in nearby well MW-4. As stated above, soil and groundwater concentrations suggest two potential source areas of petroleum constituents within the Bell Terminal Tank Farm area: 1) in the central portion of the Bell Terminal Tank Farm area, and 2) along the western property boundary in an area outside the tank farm wall. Other source areas located downgradient of the Bell Terminal Tank Farm area likely occur on the former PEO property near the locations of the former diesel ASTs. The source for soil and groundwater impacts in the central portion of the Terminal is likely related to minor, incidental releases associated with operations of the Terminal. The maximum petroleum hydrocarbon concentrations observed in soil and groundwater in the Bell Terminal Tank Farm area occur at locations in the upper zone along the western property boundary, but outside the tank farm wall. Elevated concentrations of petroleum hydrocarbons in soil and groundwater in the upper zone and in the area beyond the extent of the confining unit on the eastern portion of the adjacent former PEO property and the presence of product in upper zone well MW-4 located near the location of the former diesel ASTs appear to indicate that there are separate sources unrelated to Time Oil operations in these areas.

8.1.3 FORMER CROSBY & OVERTON TANK AREA

In the former Crosby & Overton area, PCBs and PAHs are the primary contaminants of concern due to apparent releases to soil during storage and removal of the oil historically stored in tanks or cleaning of tanks in this area. Contaminated soil was removed from this area as part of the removal actions for the East Property and former PCP mixing area in the fall of 2002. PCB and cPAH

contamination appeared to be limited to surface soil in the former Crosby & Overton source area and has not been detected in groundwater. The removal of soil to depths ranging from 0.5 to 2.5 ft BGS resulted in concentrations of PCBs and cPAHs below the preliminary screening levels at most locations (Figures 2-5 and 2-6.)

8.2 GENERAL CONTAMINANT RELEASE AND TRANSPORT MECHANISMS/PATHWAYS

The release mechanisms at the Terminal are predominantly related to historic spills to soil within each of the source areas. Chemicals can be present in the subsurface in the solid or dissolved phase, or as NAPL, either as a LNAPL or, potentially, a DNAPL. Liquids released to the ground surface can percolate through the soil column to groundwater, or chemical or biochemical processes can mobilize chemicals in soil and result in migration to groundwater.

Properties of the soil that influence mobility of the contaminants include: soil heterogeneity, permeability, mineralogy, grain size, and pore geometry. As contaminants migrate through soil pores as NAPL, a portion of the NAPL is retained within the soil pores due to surface tension. The retained NAPL, referred to as residual NAPL, remains essentially immobile in the soil pores, but can constitute a long-term source of dissolved-phase contamination for fluids moving through the soil column. If the release is of sufficient volume to exceed the retention capacity of the soil, the NAPL will continue to migrate downward to low-permeability zones or to the water table. Therefore, the vertical distribution of NAPL in unsaturated soil is controlled by the depth of the water table, as well as the vertical permeability and soil sorptive capacity. At the top of the capillary fringe, NAPL with a density less than that of water (LNAPL) spreads laterally and typically migrates in the direction of groundwater flow. Migration of LNAPL is controlled by the groundwater gradient, the presence of higher permeability material in the groundwater zone (i.e., coarser-grained aquifer material or fill); the volume or rate of the release; the presence of constructed (i.e., fill along pipelines) or natural preferential pathways; and the physical characteristics of the LNAPL. NAPL with a density greater than that of water (DNAPL) can displace soil porewater and continue downward into the saturated zone, migrating along the surface of impermeable geologic boundaries (e.g., silt layers) and through relatively permeable pathways (e.g., sandy interlayers). The transport of DNAPL through the subsurface is based on the physical characteristics of the DNAPL, the volume and rate of the release, and the presence of lower permeability materials within the hydrogeologic system.

Dissolved-phase contamination in groundwater results from contact between infiltrating water and contaminated soil in the unsaturated zone, and/or subsurface water and NAPL. This contact may occur through one or more of the following ways:

- Infiltration and movement of water by gravity through the unsaturated zone containing residual NAPL or contaminated soil.
- LNAPL in contact with groundwater at the water table surface
- DNAPL in contact with groundwater within the saturated zone.

The presence of PCP in groundwater at concentrations above its reported solubility in water (14 mg/L at 25°C) and detections of petroleum products at similar locations are likely explained by the presence of carrier compounds in the PCP formulations which will increase the solubility of the PCP.

Certain constituents, such as the lower molecular weight aromatic hydrocarbons (e.g., BTEX) are relatively soluble and volatile and more readily enter the dissolved or air phase. Volatilization occurs more readily in the unsaturated zone than in the saturated zone. Higher molecular weight compounds (e.g., PAHs and PCBs) are less soluble and, therefore, do not enter the dissolved phase as readily. In comparison with PAH compounds, PCP tends to be more mobile. PCP generally exists in the dissolved phase at ambient groundwater pHs (6 to 8). Dioxins/furans partition very strongly to soil and are generally insoluble in water (although soluble in PCP and other organic liquids). Dioxins/furans are generally found in surface soil or near source areas, but NAPL and/or PCP in a separate phase may act as a carrier of these chemicals into the subsurface environment. Dioxins/furans will not tend to migrate in the dissolved phase in groundwater, but rather will resorb to soil. Partitioning of inorganic constituents (e.g., metals) between solid and dissolved phases is mainly controlled by a complex combination of precipitation and sorption reactions, and whether reducing or oxidizing conditions are present. The biodegradation of the petroleum hydrocarbons in the lower zone groundwater appear to have created reducing conditions favoring the mobilization of metals. This may explain the overall higher concentrations of metals in the lower zone under reducing conditions versus the upper zone under oxidizing conditions.

In addition to the chemical properties of the individual contaminants (e.g., solubility), the primary fate processes controlling advection, hydrodynamic dispersion, and adsorption are the movement of dissolved contaminants in groundwater downgradient from the source area. Advection is the transport of constituents by groundwater movement and is, therefore, dependent in part on the hydraulic conductivity of the formation. Hydrodynamic dispersion is the spread of a chemical constituent in directions other than those that would be expected from advection only. The effect of hydrodynamic dispersion is to dilute the contaminant concentrations within the dissolved plume by mechanical mixing and by molecular diffusion at low groundwater velocities. Adsorption is the partitioning of constituents from the dissolved phase onto organic matter within the formation. The most hydrophobic or least soluble compounds (e.g., PAHs and dioxins/furans) adsorb more readily onto soil surfaces than the more soluble compounds,

resulting in a retardation or slowing of their transport velocity relative to groundwater flow. Other processes that may retard the transport of dissolved-phase contamination include biodegradation and complexation or precipitation-dissolution reactions. The degree that these processes affect the migration of dissolved constituents depends on the characteristics of the hydrogeologic system and the type of organic or inorganic compound.

The primary fate processes controlling petroleum hydrocarbons in the subsurface are biodegradation and volatilization. Both aerobic and anaerobic biodegradation of petroleum constituents are known to occur in the subsurface. The degree of degradation that occurs is a function of the availability of the proper nutrients and an electron acceptor (e.g., oxygen). The lower molecular weight aromatic hydrocarbons (e.g., BTEX) are more readily degradable than the higher molecular weight compounds (e.g., PAH). Volatilization acts primarily on the low molecular weight volatile compounds (e.g., BTEX) as compared to the high molecular weight PAH. Aromatic VOCs, such as petroleum hydrocarbons and BTEX, may be strongly attenuated through geochemical and biodegradation processes, whereas attenuation of PCP along migration pathways may be minor due to low partitioning affinity to the aquifer matrix and resistance to degradation under certain aquifer conditions. If contaminants remain in the dissolved phase, or as LNAPL, and are not attenuated, they can be discharged with groundwater to a surface water body.

8.3 SITE-SPECIFIC FATE AND TRANSPORT PROCESSES

Based on the data presented in Section 7.0, releases of contaminants at the source areas have occurred during operation of the Terminal. Contamination of soil at each of the source areas appears to be the result of releases of hazardous substances directly onto the soil and subsequent migration. At the former PCP mixing area, these releases occurred during PCP formulation activities. At the former Crosby & Overton area, the releases occurred during lease operations. In the Main Terminal Tank Farm area and loading racks, these releases occurred due to spills and possibly leaking along conveyance pipelines and/or from activities associated with bulk fuel storage. In the Bell Terminal Tank Farm area, these releases may have occurred due to with activities associated with bulk fuel storage or unknown activities along the western property boundary and on the former PEO property. A conceptual site model for the Terminal, which includes a schematic of the source areas, release mechanisms, and transport mechanisms is provided on Figure 8-1.

Based on the hydrogeologic data for the Terminal, groundwater flow direction in the upper and lower zones is toward the Willamette River. Groundwater seeps have not been observed along the riverbank adjacent to the Terminal, so groundwater likely discharges to the river below the water line.

Consequently, there is a potential for dissolved chemicals in groundwater or LNAPL from the Main Terminal Tank Farm area to be transported to the river by groundwater flow. There does not appear to be a current source of groundwater contamination to the river at concentrations exceeding screening levels for the following reasons:

- LNAPL has not been observed in nearshore wells.
- As described earlier, groundwater data collected from Willamette River shoreline wells installed in November 2004, February 2005, and June 2005 indicate that groundwater contaminant concentrations downgradient of the Main Terminal Tank Farm area are not currently reaching the river at concentrations above applicable screening level values. Therefore, even though there is a physical groundwater transport pathway from the upland areas of the terminal to the river, there is not a complete exposure pathway via groundwater to potential receptors in the Willamette River for facility-related contaminants at concentrations above the applicable screening levels.
- The Bell Terminal Tank Farm area boundary is located more than 600 ft from the river shoreline. Groundwater concentrations from the operational area of the Bell Terminal Tank Farm area do not exceed preliminary screening levels, except for low level metals concentrations. Elevated groundwater concentrations along the downgradient western property boundary and on the former PEO property do not appear to be related to Time Oil operations.
- The east-west trending storm drain could historically have provided a preferential pathway for the transport of PCP- impacted groundwater from the Phase II source areas to the river; however, ongoing operation of the groundwater intercept system provides capture/migration of contaminant migration to the river. Migration of PCP in groundwater is also contained through operation of the groundwater interim action system and performance of the full scale ISCO injections within the PCP plume area. PCP has not been consistently detected at the downgradient wells closest to the river or at the river outfall since operation of the groundwater interim action began.

If impacted groundwater has historically discharged to the river from the Terminal, there is the potential for impact to sediment or surface water quality. Historical impacts to the river are being addressed as part of the RI/FS for the Portland Harbor Superfund Project

8.3.1 PCP MIXING AREA

The majority of the contaminated soil from the former PCP mixing area and former soil stockpile area has been excavated and disposed offsite. However, residual amounts still remain at depths typically at or greater than 13 ft BGS (the approximate water table elevation) within and directly adjacent to the mixing area. PCP formulations were likely introduced into the environment through spills of PCP-containing NAPL directly onto the ground surface and subsequent migration based on the fate and transport parameters discussed in the previous section. Historical information indicates that most of the

PCP formulations were less dense than water (i.e., specific gravity of less than 1) and, therefore, would migrate through the environment as LNAPL; however, at least one formulation had a density greater than 1 and could move as DNAPL through the subsurface. LNAPL has been observed in wells LW-11S and OX-2S, which are located downgradient from the PCP mixing area. DNAPL has never been observed.

Elevated levels of PCP in the upper zone and lower zone groundwater at the Terminal indicate that PCP has partitioned from the soil and/or NAPL into the groundwater. PCP has been observed in groundwater in both zones in and to the south and southwest (downgradient) of the former PCP mixing area. Historically, low PCP concentrations have also been detected at low concentrations within the deep sand unit near well LW-12D2, located within the former PCP mixing area. The available data suggest that the primary source of the groundwater contamination in the upper zone results from partitioning of PCP from the residual amounts remaining in the soil within and adjacent to the former PCP mixing area and subsequent advective migration from this area, or from partitioning of LNAPL that has migrated downgradient from the PCP mixing area along the water table surface. LNAPL in the downgradient wells has not been observed consistently or over a wide area and is typically associated with very low seasonal groundwater levels. This inconsistent occurrence suggests that the LNAPL exists in a residual phase within the subsurface adjacent to these wells most of the year and then is released/mobilized to the wells when water levels are low.

PCP in the lower zone likely results from downward migration of dissolved PCP via groundwater from the upper to the lower zone where the silt layer separating the upper and lower zones is heterogeneous and/or discontinuous. No DNAPL has been encountered during any of the investigations to date. Therefore, downward migration across the confining unit likely occurs under the natural downward groundwater gradient within the upper zone plume resulting in the elevated concentrations detected in the lower zone. Under this scenario, the PCP concentration distribution within the lower zone would appear to mimic that of the upper zone, while mean groundwater flow in the lower zone would still be toward the river. This distribution is reflected by the observation of the highest concentration of PCP in the lower zone at a downgradient location from the source areas in the upper zone. Further migration of dissolved PCP in the lower zone groundwater would be primarily controlled by advective groundwater flow in a downgradient direction from the impacted area.

The storm drain (Figure 2-1) and backfill associated with its construction appear to affect groundwater flow and contaminant transport in the upper zone. The presence of the storm drain may partly explain the southerly components of upper zone groundwater flow in the Terminal area as groundwater flows toward the zone of higher hydraulic conductivity (i.e., the line backfill). The storm drain does not appear to fully penetrate the confining unit (where present) and, therefore, is not considered to provide a vertical pathway for groundwater flow and contaminant transport to deeper

aquifers. Groundwater samples collected from manholes in the storm drain and at the storm drain outfall in the river (Table 2-4) indicate that the storm drain had been serving as a preferential pathway for upper zone groundwater to the river. The stormwater intercept system was installed to eliminate the potential for upper zone groundwater to migrate through the storm drain to the river. The influence of the stormdrain on groundwater quality will continue to be evaluated as part of the groundwater interim action.

Historical PCP concentrations in groundwater were used to evaluate changes in potential contaminant migration pathways between the historical and current monitoring periods. Figures 8-2 through 8-5 show the approximate distribution of PCP in the upper zone in February 1991, March-April 1997, spring 1999, and February 2001, respectively. The PCP distribution in the upper zone for October 2003 and November 2004 is shown on Figures 7-35 and 7-36. Historically and currently, the PCP in the upper zone is limited to a narrow plume that extends from the former PCP mixing area downgradient about 450 ft to LW-13S. The PCP concentrations in the upper zone are highest within and just downgradient of the former PCP mixing area. PCP appears to have migrated in a downgradient direction toward the south-southwest. Upper zone PCP concentrations within the mixing area have decreased significantly since the first sampling in 1991. This decrease may reflect the removal of contaminant source material during the 1989 soil excavation within the former PCP mixing area, as well as natural attenuation of the PCP (through adsorption, biodegradation, etc.) or downgradient movement past these monitoring points. By May 1999, PCP concentrations as high as 23,000 µg/L were observed at well LW-11S, but there were only slight increases at well LW-4S, the most downgradient well where there have been consistent low level PCP detections. PCP has not migrated in the upper zone farther downgradient to the south than well LW-13S, as indicated by the lack of detected concentrations in upper zone wells near the south property boundary (LW-10S, when saturated). However, low PCP concentrations were detected during the last four sampling events in the lower zone wells at the western extent of the confining unit as discussed below.

The decrease in PCP concentrations in the upper zone since 2002 is likely related to the removal of the majority of the remaining contaminated soil during the soil removal in the former PCP mixing area and from implementation of the ISCO technique. (Note that the PCP distribution based on the earlier data is an approximation, and less accurate than the distribution based on the 2000-2004 data because of the difference in the number of data points as well as potential QA/QC issues.) Figures 8-6 through 8-8 show the approximate distribution of PCP in the lower zone in March-April 1997, spring 1999, and February 2001. The PCP distribution in the lower zone in fall 2003 is shown on Figure 7-45. The PCP concentration contour maps indicate that groundwater contamination in the lower zone historically and currently consists of several discrete areas of contamination rather than a contiguous plume. Historically, the discrete areas were mainly located within and near the former PCP mixing area, in proximity to well

LW-11D, and in an area including wells LW-4D and RW-2. The historically highest PCP concentrations in groundwater in the lower zone occurred at well LW-4D (18,000 ppb in October 1997) have decreased significantly at this location, and since spring 1999, the PCP concentrations have been mostly below the laboratory reporting limits. Since November 2002, low level PCP concentrations (generally less than 1 µg/L) have also been detected on an intermittent basis in wells LW-6D located between LW-4D and the river and LW-10D located at the southern property boundary. These detections have not been observed on a consistent basis, which may be related to dilution of groundwater by river water at the groundwater-surface water interface (particularly in the lower zone where the river stage influence is greatest); natural attenuation processes (e.g., adsorption, biodegradation, etc.); or seasonal variability. Since October 2000, recovery well RW-2 has been pumping PCP-impacted groundwater from the lower zone, and has generally been effective in containing PCP-contaminated groundwater migration from the area surrounding the well.

Low concentrations of PCP (1 to 3 µg/L) were detected in the deep sand unit at LW-12D2 sporadically (three times) during quarterly monitoring between May 1999 and June 2002. This well was subsequently abandoned in advance of the soil removal action in the former PCP mixing area. The historical detections in this well were likely due to downward vertical migration of contaminants via groundwater flow between the upper and lower zones. The source area for the impacts to the upper zone has been mitigated by the soil removal actions in 1989 and 2002, so the potential for ongoing groundwater impact in this area is considered to be low.

The concentrations of diesel-range and gasoline-range petroleum hydrocarbons and VOCs detected in wells downgradient of the former PCP mixing area are likely due to the presence of PCP carrier oils (e.g. mineral spirits) that are present as LNAPL and the partitioning of these constituents into groundwater. The distribution of detected petroleum hydrocarbon concentrations in this area is consistent with the intermittent presence of LNAPL observed in well LW-11S and the recent occurrence of LNAPL at wells OX-1S, OX-2S, and LX-3S and the presence of elevated PCP concentrations in groundwater. The intermittent nature of LNAPL occurrences at LW-11S appears to be related to seasonal groundwater fluctuations, such that residual LNAPL is observed in nearby monitoring wells under low water table conditions or to effects from the ISCO implementation events.

8.3.2 TANK FARMS

Soil contamination in the Main Terminal and Bell Terminal Tank Farm areas occurs primarily at depth within the capillary fringe. Contamination in the soil above the capillary fringe is present, but typically at lower concentrations. The elevated concentrations of contaminants within the capillary fringe

in the Main Terminal and Bell Terminal Tank Farm areas indicates that releases of petroleum substances to the ground surface were historical and that NAPL has had sufficient time to migrate downward and spread laterally within the capillary fringe. The presence of the same contaminants both in groundwater and in soil indicate that these contaminants have partitioned from the soil and/or NAPL into the groundwater. Most of the shallow soil samples containing elevated petroleum hydrocarbon concentrations did not contain elevated benzene or ethylbenzene concentrations, indicating that the low molecular weight aromatics (e.g., BTEX) that may have once been present have undergone biodegradation or volatilization, or have been removed by infiltrating precipitation.

In the Main Terminal Tank Farm area, contaminants are present in the upper and lower zone groundwater. However, contamination of the lower zone groundwater is typically found only in the western portion of the Main Terminal Tank Farm area where a silt layer separating the upper and lower zones does not exist or is discontinuous. In this portion of the Main Terminal Tank Farm area, only a single unconfined groundwater zone exists. In the eastern portion of the Main Terminal Tank Farm area, where the silt layer separating the upper and lower groundwater zones is present, contaminant concentrations in the lower zone groundwater are typically low and are primarily detected near where the silt layer pinches out or becomes discontinuous. This suggests that the silt layer over much of the western portion of the Main Terminal Tank Farm area provides a natural geologic/hydrogeologic boundary between the upper zone groundwater and the lower zone groundwater, limiting the vertical migration of contaminants over this portion of the Main Terminal Tank Farm area, or that the characteristic of the contaminant does not lend itself to vertical migration.

In the Bell Terminal Tank Farm area, contaminants are present in the upper zone groundwater, but not in the lower zone groundwater. The lack of contaminants in the lower zone groundwater indicates that the silt layer is acting as an impermeable boundary and the two groundwater zones are not interconnected in this area. Concentration contours for selected contaminants in upper zone and lower zone groundwater discussed in Section 7.0 indicate that lateral migration in the downgradient groundwater direction has occurred. The lateral migration is likely a combination of the individual contaminant properties (e.g., solubility) and the processes of advection, hydrodynamic dispersion, and adsorption. The lack of contaminants in groundwater upgradient of the source areas indicates that contaminant migration in groundwater is primarily due to advection (transport of constituents by groundwater movement). For contamination in the groundwater along the western property boundary of the Bell Terminal Tank Farm area or on the former PEO property, there is not enough information about the nature of the release to determine the mechanisms affecting migration. However, the downgradient extent of the diesel-range and gasoline-range petroleum hydrocarbon plumes in the Bell Terminal Tank Farm area suggests that lateral movement of the contaminants is slow, which may be due to a low rate of

advection in this area; possible natural attenuation (through adsorption, biodegradation, etc.); and/or volatilization.

The distribution of petroleum constituent concentrations within and downgradient of the Bell Terminal tank farm area suggest the presence of three commingled groundwater plumes, as discussed earlier. Even though it is likely that the plume originating from the central portion of the Bell Terminal commingles with the plume originating near the western property boundary, and that both of these plumes commingle with other contamination originating on the former PEO property in the area where the former diesel ASTs were located, it is unlikely that the elevated concentrations observed near the western property boundary or on the former PEO property originate from the Bell Terminal tank farm operations. This conclusion is based on the significant increase in both soil and groundwater concentrations for petroleum constituents across the western property boundary and on the former PEO property. Because the confining unit boundary on the former PEO property is estimated within the likely source area where the former diesel ASTs were located on the eastern portion of the PEO property, the elevated groundwater concentrations in this area could reflect groundwater contamination resulting from direct releases to soil where the confining unit is not present or downgradient flow of contaminated groundwater from the upper zone across the confining unit boundary. However, in the latter case, concentrations would typically decrease instead of increase in the downgradient direction.

8.3.3 CROSBY & OVERTON TANK AREA

As discussed above, contamination of soil within the former Crosby & Overton tank area is anticipated to be the result of waste oil spills from the tanks historically located within this area. Because PAHs and PCBs tend to absorb or bind to soil, contamination in this area was anticipated to be limited to the upper few feet of surface soil. As part of the soil removal action conducted for the former PCP mixing area and soil stockpile, impacted soil was excavated from this area and disposed offsite. Remaining PCP and cPAH concentrations in soil at completion of the removal action are shown on Figures 2-5 and 2-6 and confirm that the vertical extent of the contamination was limited. Because historical releases in this area resulted in contamination that was limited to surface soil and groundwater contamination has never been observed in this area, the concentrations remaining in soil are considered to be protective of groundwater and additional cleanup in this area is not necessary.

9.0 SCOPE OF FUTURE ACTIVITIES

This section outlines the scope of future activities to be conducted in support of the Phase II and Phase III RIs for the Terminal. The future Phase II RI activities will include the continued monitoring of the Phase II wells to assess the effectiveness of the continuing implementation of the groundwater interim action, full-scale ISCO injections within the extent of the PCP plume in the upper zone, and performance of a source control evaluation to assess the potential for impacts to the Willamette River. The future Phase III RI activities will include the quarterly sampling of the recently installed Phase III monitoring wells as part of the on-going quarterly monitoring program. With completion of the RI, a risk assessment and feasibility study will be initiated for the Terminal. The anticipated scopes of work for these activities are summarized in the following sections.

9.1 PHASE II/III GROUNDWATER MONITORING

For assessment of the effectiveness of the Phase II groundwater interim action and implementation of the full-scale ISCO technique, groundwater monitoring will be continued at the Phase II monitoring locations. In a letter to DEQ dated February 2, 2004 (Landau Associates 2004d), a request was made to modify the Phase II sampling program beginning with the first quarter 2004 sampling event. These changes were implemented during the first quarter 2004 upon verbal approval by DEQ (2004c); DEQ has indicated that they will provide written approval soon. Below is a summary of the changes to the Phase II sampling program:

- Elimination of eight wells from the Phase II sampling program for future events. These wells include five upper zone wells (H, K, L, LW-1S, and LW-5S), and three lower wells (O, R, LW-1D).
- Reduction of the monitoring frequency for selected Phase II wells from quarterly to semiannually. Twenty-four Phase II wells were proposed for semiannual sampling, including wells B1, B2, D, J1, J2, LW-3D, LW-4S, LW-4D, LW-11S, LW-11D, LW-13S, LW-14D, LW-15D, LW-16D, OX-1S through OX-8S, OX-8D, and RW-1. Any other Phase II wells not included in this list were retained for use in quarterly evaluations with wells installed as part of the Phase III RI, and for evaluation of performance of the groundwater interim action system.

In addition to the sampling of the Phase II monitoring wells, the recently installed Phase III monitoring wells will be sampled for four consecutive quarters (1 year), or as necessary, to adequately assess environmental conditions within the Phase III study area and to complete the hydrogeologic conceptual model. The first quarterly sampling of the wells installed during October and November 2004 was conducted in November 2004. The final quarterly sampling of the Phase III wells will be anticipated to occur in August 2005. The analytical results for the Phase II and Phase III sampling events for the

Terminal will continue to be documented in quarterly groundwater monitoring reports that will be submitted to DEQ.

9.2 GROUNDWATER INTERIM ACTION

The objective of the ongoing groundwater interim action is to contain the PCP plumes identified in the upper and lower zones at the Terminal and prevent contaminant migration offsite across the southern property boundary or to the Willamette River. Capture of the PCP plume within the lower zone will be maintained by the continued pumping of recovery well RW-2. Additionally, seasonal pumping of horizontal well HRW-1 within the upper zone and pumping from the groundwater intercept system in the storm drain at SDM-1 will be continued. Alternatives for full-scale remediation of the PCP plume in the upper zone will be evaluated in the feasibility study. Groundwater interim action activities at the Terminal will continue to be documented in the quarterly groundwater monitoring reports.

9.3 FULL- SCALE ISCO IMPLEMENTATION

To further facilitate the remediation of PCP contamination in the groundwater and soil at the Terminal following the 2002 soil excavation in the lower PCP mixing area, the ISCO technique was implemented as an interim remedial alternative for PCP in the upper zone in July 2004 and January 2005. The results from the July 2004 are summarized in Section 2.2.2.7 and presented in the Third Quarter 2004 groundwater monitoring and groundwater interim action status report (Landau Associates 2005a). The January 2005 results are pending. Another ISCO event is anticipated for the fall of 2005 or winter 2006 when elevated water levels will maximize the effectiveness of the technique.

9.4 SOURCE CONTROL EVALUATION

A source control evaluation will be conducted to determine whether or not the facility as a whole is an ongoing source of COIs to the in-water portion of the Portland Harbor Superfund site at levels that may present risk to in-water receptors. Based upon the data collected during the RI/FS for the Terminal, the source control evaluation will consider all potential migration pathways to the river.

The source control evaluation will focus on the potential for an upland petroleum hydrocarbon source to impact the Willamette River (i.e., the potential for NAPL that has been observed in the Main Terminal Tank Farm to impact the river). Time Oil has demonstrated that, even though there is a physical groundwater transport pathway from the upland areas of the terminal to the river, there is not a complete exposure pathway via groundwater to potential receptors in the Willamette River for facility-related contaminants at concentrations above the applicable screening levels, based on groundwater

concentrations in Willamette River shoreline wells. The evaluation will include the collection of geochemical data to evaluate the potential for natural attenuation to limit the potential for NAPL to migrate to the river and the use of a fate and transport model that takes into account the effects of natural attenuation. The results of the source control evaluation will be provided to DEQ in a report that will provide recommendations on the effectiveness of use of natural attenuation to prevent migration of NAPL to the river.

9.5 RISK ASSESSMENT

Time Oil will submit a work plan for conducting human health and ecological risk assessments for the Terminal. The risk assessments will be conducted in accordance with OAR 340-122-084 and DEQ's risk assessment guidance (DEQ 1999, 2000b). The risk assessment approach will include use of the combined Phase II and III data sets for identification of COPCs/CPECs, and exposure scenarios for both human health and ecological risk. The work plan will be provided to DEQ for approval. Following approval of the risk assessment approach by DEQ, a document providing the results of the COPC/CPEC identification and the human health and ecological risk assessments will be provided to DEQ. The risk assessment will also include identification of hot spots of contamination in soil and groundwater using acceptable risk levels identified for the Terminal.

9.6 FEASIBILITY STUDY

In accordance with the Phase I/II RI/FS work plan and the VCP agreement with DEQ, a feasibility study (FS) will be conducted to develop and evaluate remedial action alternatives for contaminated media, which will achieve remedial action objectives and that are protective of human health and the environment. The FS will be conducted in accordance with OAR 340-122-085 and DEQ's *Guidance for Conducting Feasibility Studies* (DEQ 1998d).

The FS evaluations will include assessment of remedial action alternatives for soil and groundwater contamination remaining within the Phase II former PCP mixing area after the soil removal action conducted in the fall of 2002, and for Phase III source areas identified in Section 7.0.

As described in the Phase I/II RI/FS work plan and according to DEQ guidance, the FS process will include the following:

- Developing remedial action objectives
- Delineating affected media
- Developing and evaluating general response actions, technologies, and process options

- Developing and evaluating specific remedial alternatives
- Recommending a preferred alternative
- Documenting the FS in a written report.

It is anticipated that recommendations for the Phase II and Phase III FS will be contingent on approval of the results from the risk assessment by DEQ.

10.0 PROPOSED SCHEDULE

The proposed schedule for the remaining elements of the RI/FS at the Terminal is provided below. The subsequent elements for the project include: conducting a source control evaluation, preparing an approach for the human health and ecological risk assessments for the combined Phase II and Phase III study areas of the terminal, implementing the risk assessments, and conducting the Terminal-wide FS. Planned intermediate deliverables are provided in the schedule below. As described in Section 9.0, other planned activities include quarterly groundwater monitoring, continuation of the groundwater interim action, and continued implementation of full-scale ISCO remediation. The groundwater interim action is ongoing and not included in the schedule elements below.

The proposed schedule is based on assumptions consistent with current knowledge and experience; the schedule may change if deviations occur in the program implementation and in the assumptions for DEQ document review time. The schedule will be updated and provided to DEQ as shifts in the schedule occur.

RI/FS Deliverables:

Review/Approve the Final Phase III RI Report by DEQ	September 2005
Submit the Source Control Evaluation Approach to DEQ	September 2005
Submit the Risk Assessment Work Plan to DEQ	December 2005
Review/Approve the Risk Assessment Work Plan by DEQ	March 2006
Submit Source Control Evaluation Report to DEQ	March 2006
Submit the Human Health and Ecological Risk Assessments to DEQ	July 2006
Review/Approve the Risk Assessment by DEQ	September 2006
Submit the FS to DEQ	November 2006
Review/Approve the FS by DEQ	January 2007

Groundwater Monitoring:

Submit the First Quarter 2005 Groundwater Report to DEQ	August 2005
Submit the Second Quarter 2005 Groundwater Report to DEQ	October 2005
Conduct the Third Quarter 2005 Groundwater Monitoring Event	August 2005
Receive Approval from DEQ on Reduction of Sampling Frequency	November 2005
Submit the Third Quarter 2005 Groundwater Report to DEQ	December 2005

Full-Scale ISCO Remediation:

Third Full-Scale ISCO Event	Winter 2006
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11.0 USE OF THIS REPORT

This Phase III Remedial Investigation Report has been prepared by Landau Associates for the exclusive use of Time Oil Co. for specific application to the Northwest Terminal. Services for this project were conducted in accordance with the Environmental Services Contract between Time Oil Co. and Landau Associates, Inc. Landau Associates has performed our services in accordance with generally accepted engineering and consulting standards for environmental work in effect at the time and locality services were performed. The reuse of information, conclusions, and recommendations provided herein by Time Oil Co. or others in connection with any site other than the Northwest Terminal without Landau Associates written permission shall be at the sole risk of Time Oil Co. and without liability to Landau Associates.

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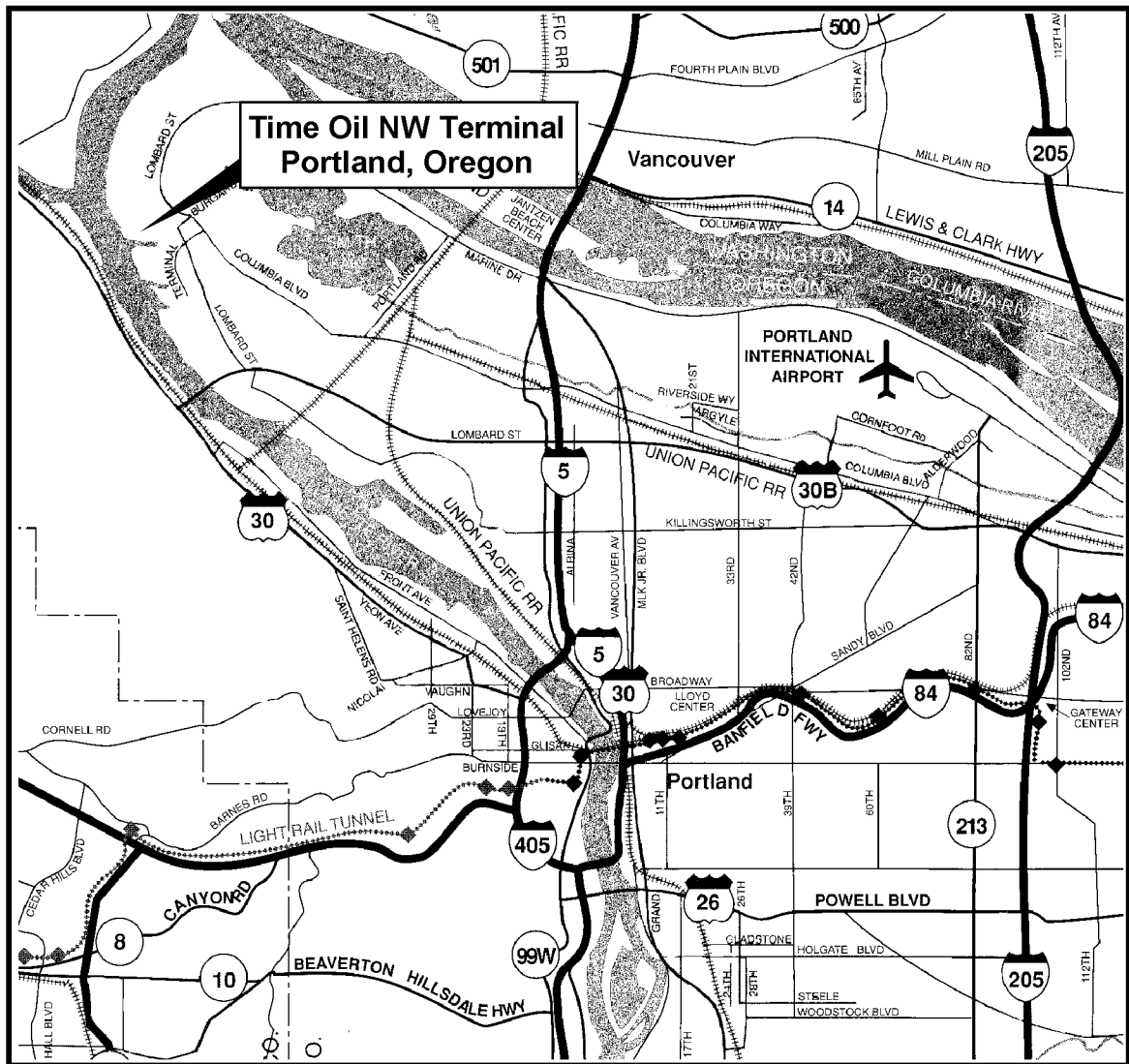
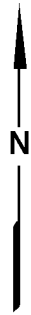
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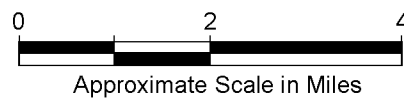
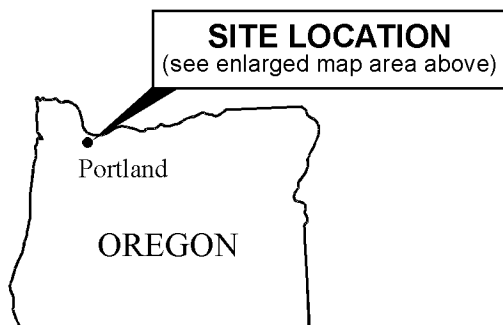
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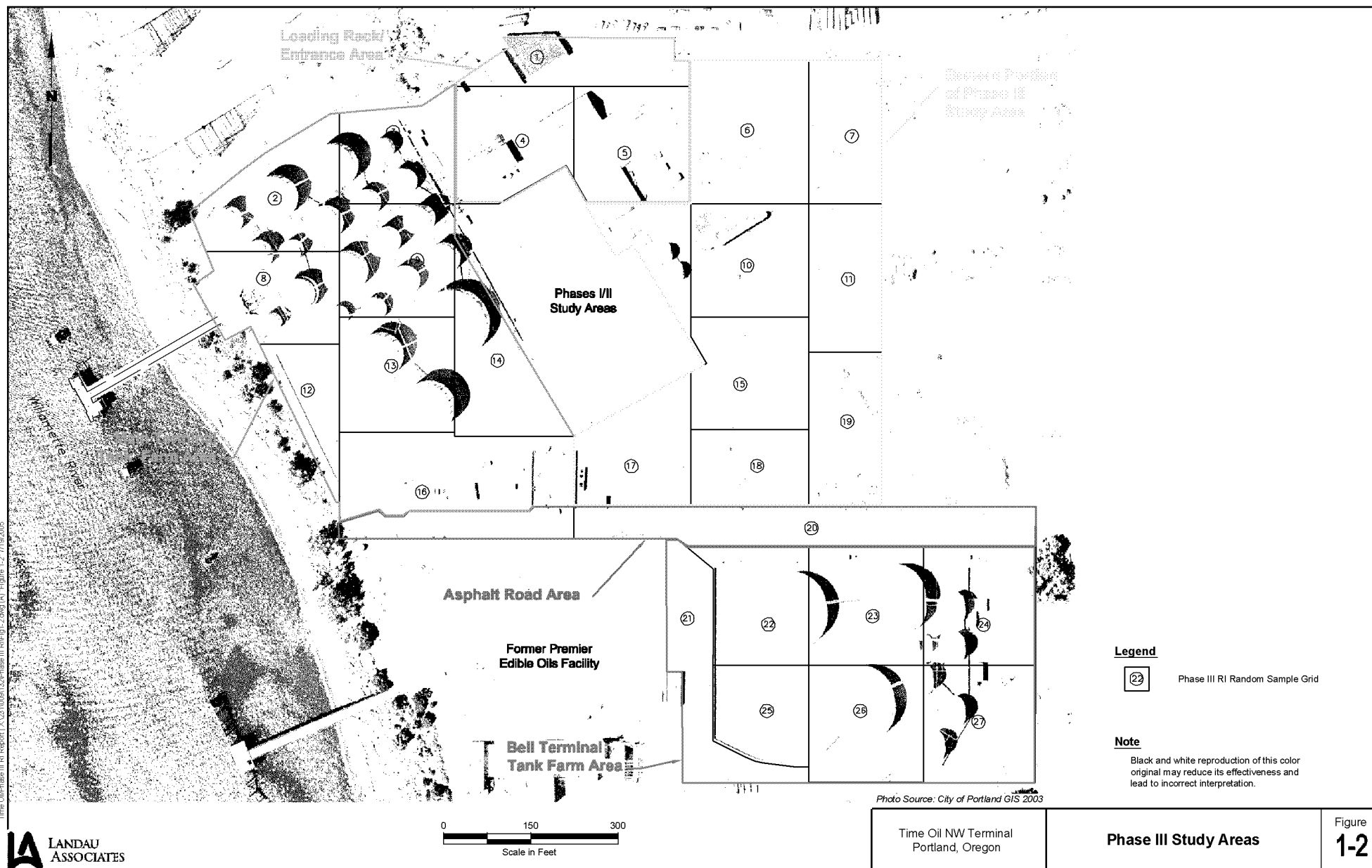
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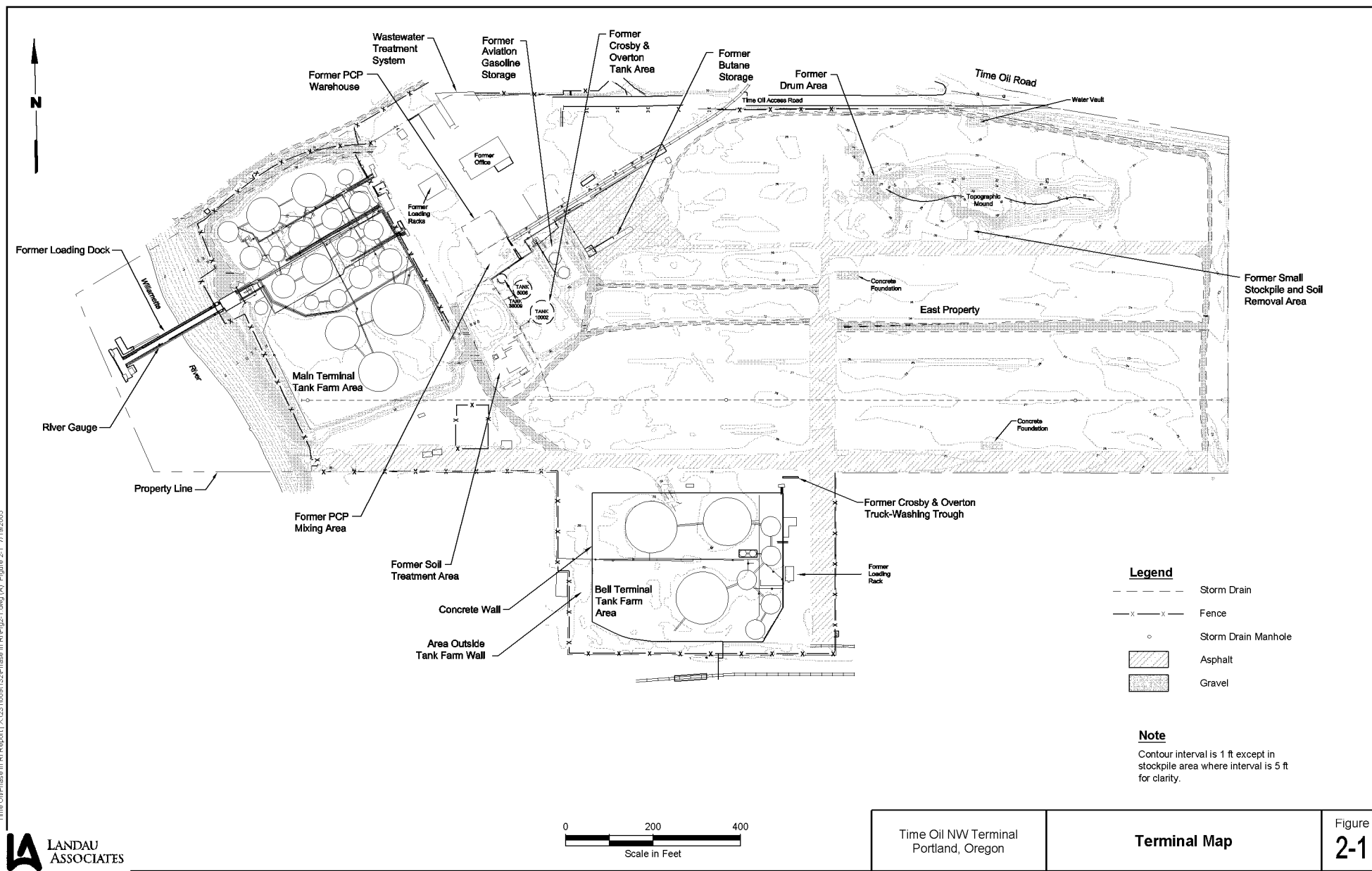


Time Oil NW Terminal
Portland, Oregon

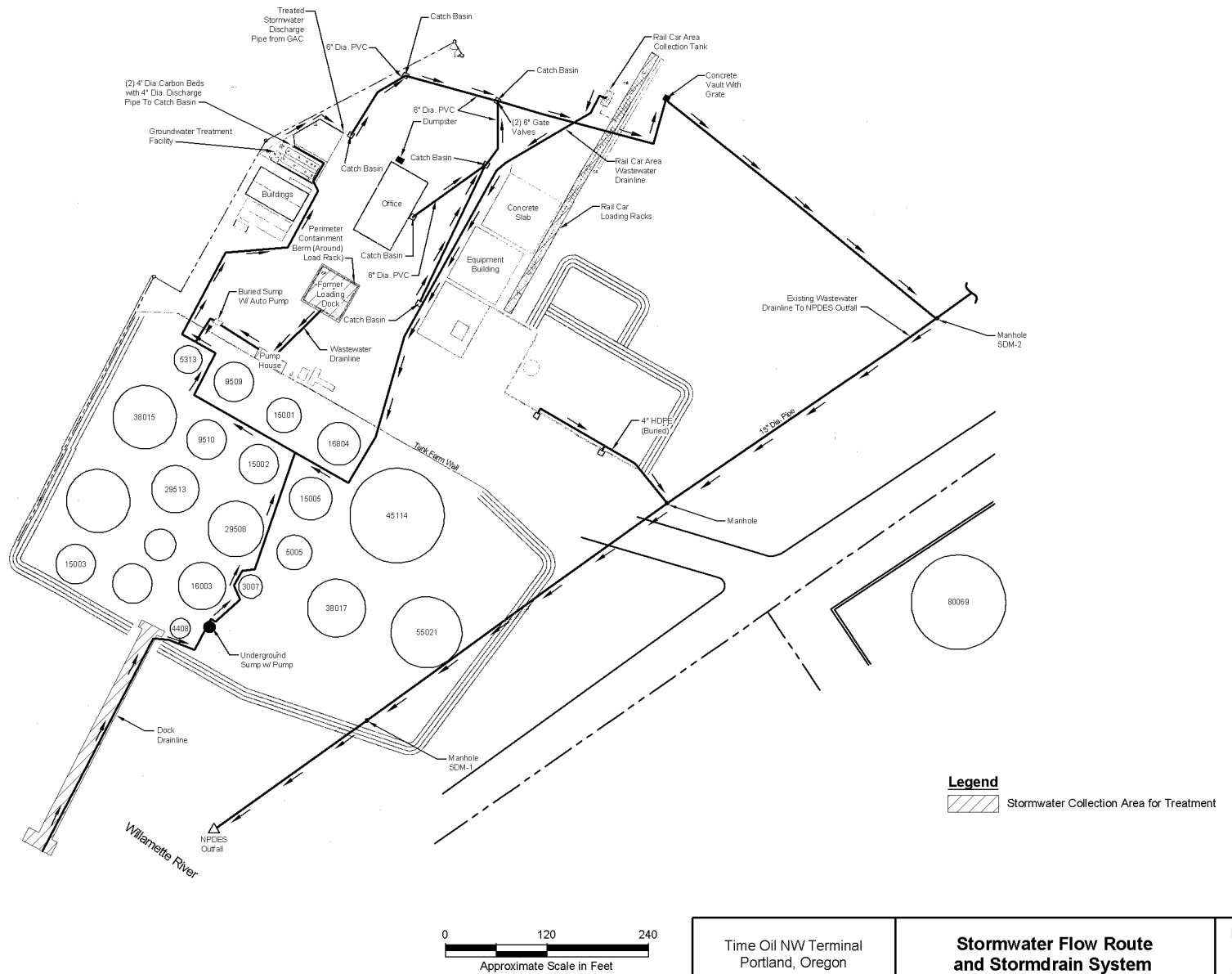
Vicinity Map

Figure
1-1





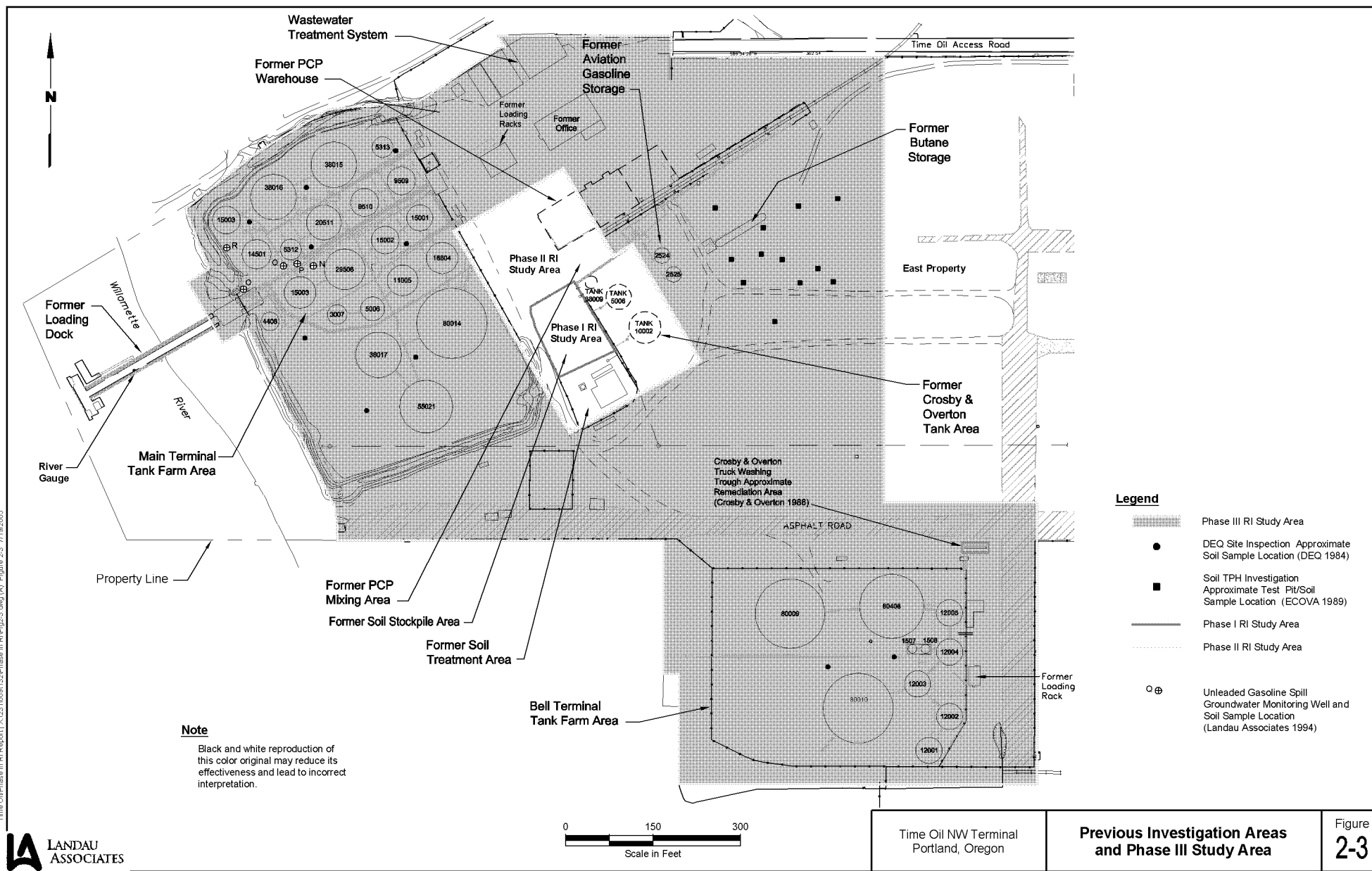
Time OilPhase II RI Report-Final / X:\231009\123Phase II RI-Final\Fig2-2.dwg (A) Figure 2-2 11/4/2005

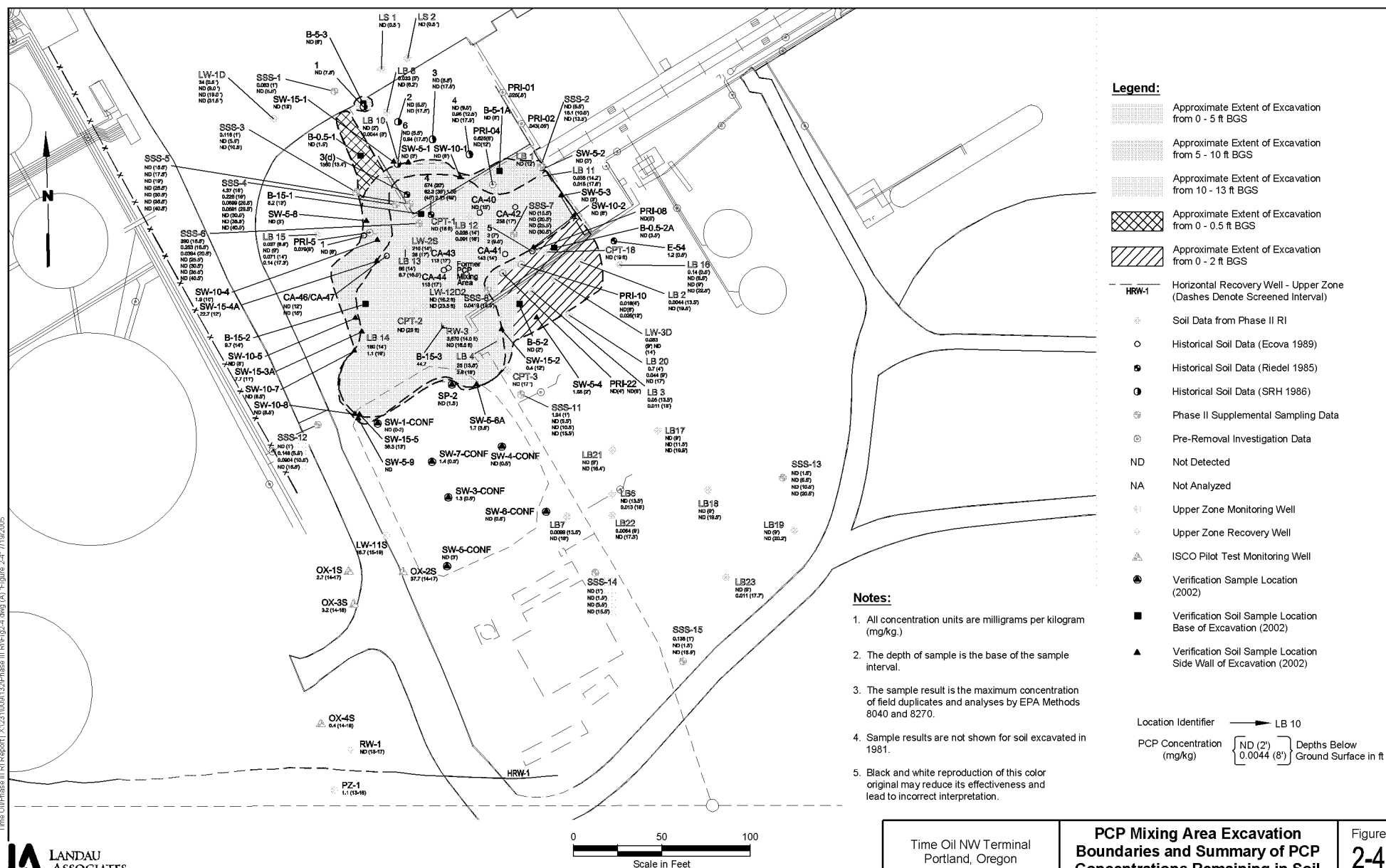


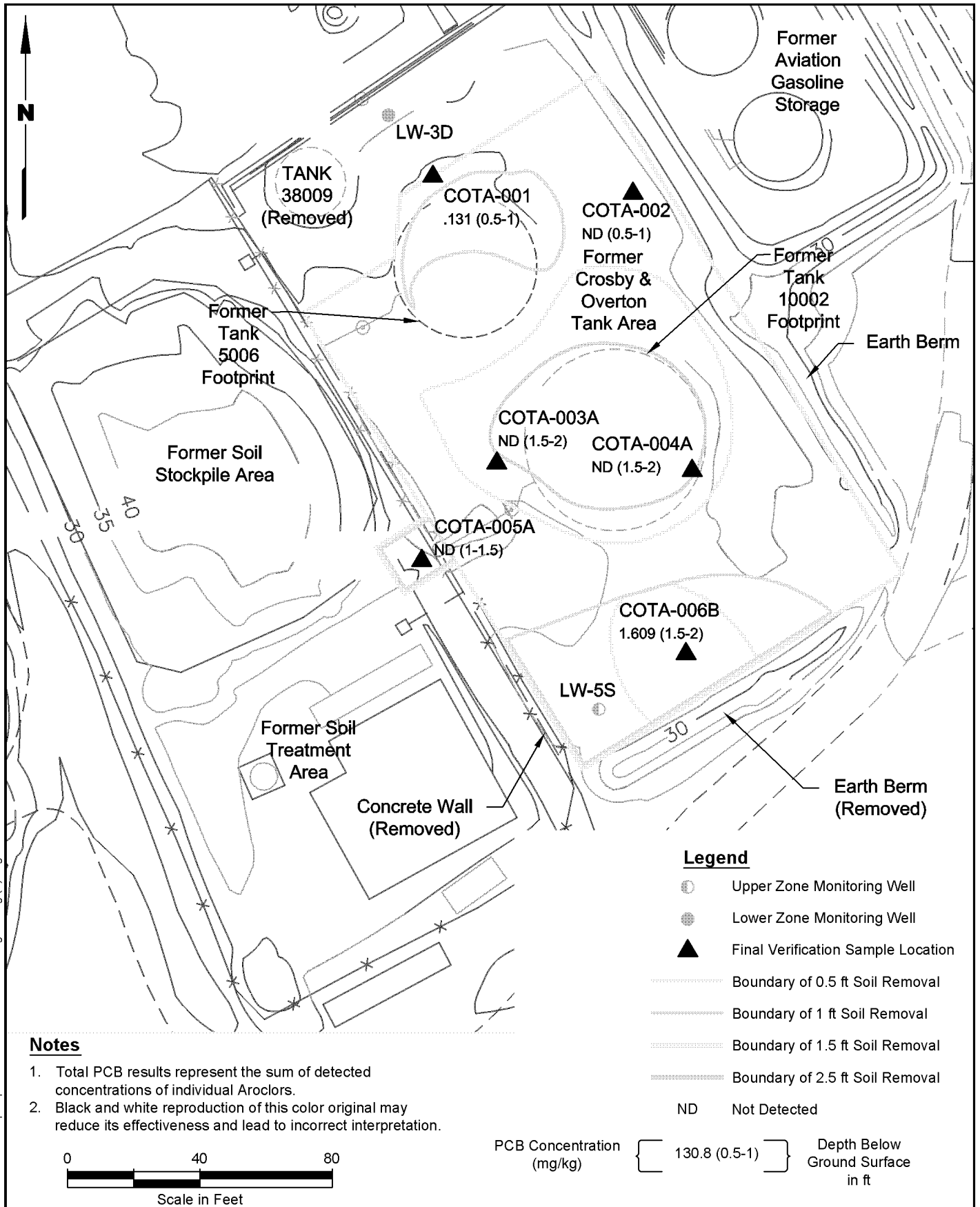
Time Oil NW Terminal
Portland, Oregon

**Stormwater Flow Route
and Stormdrain System**

Figure
2-2



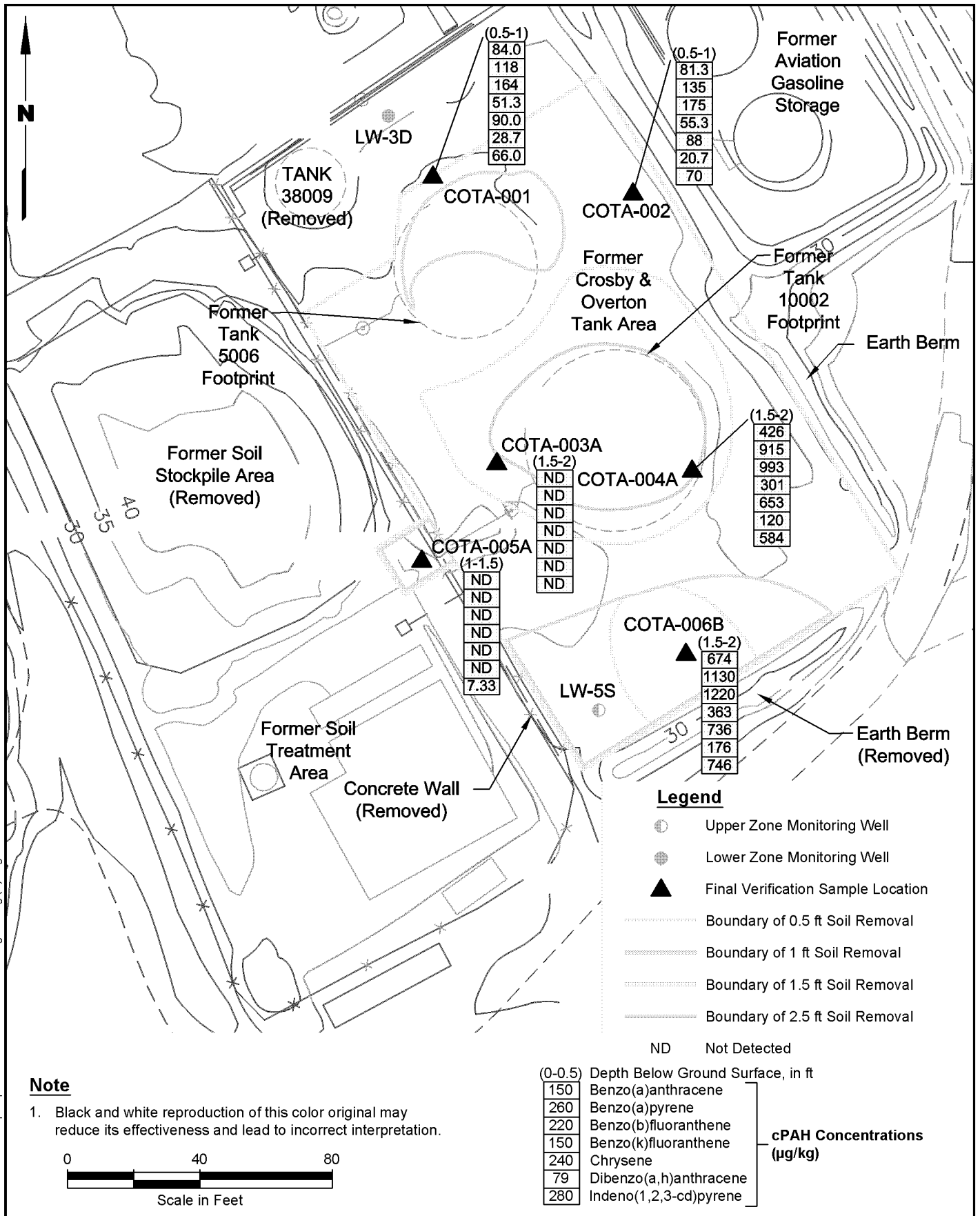




Time Oil NW Terminal
Portland, Oregon

**Removal Boundaries and Verification
Soil Sample PCB Results
Former Crosby & Overton Tank Area**

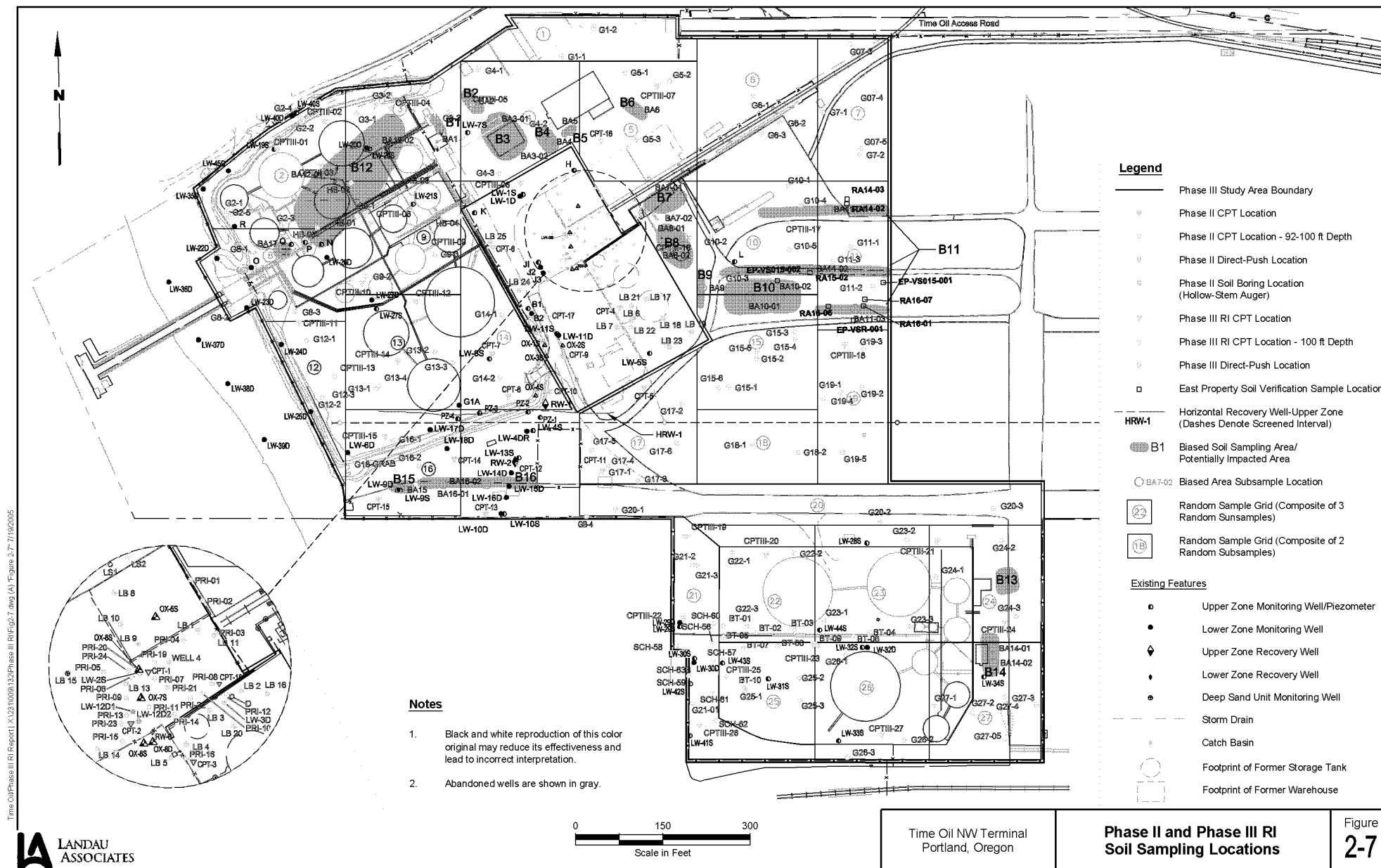
Figure
2-5

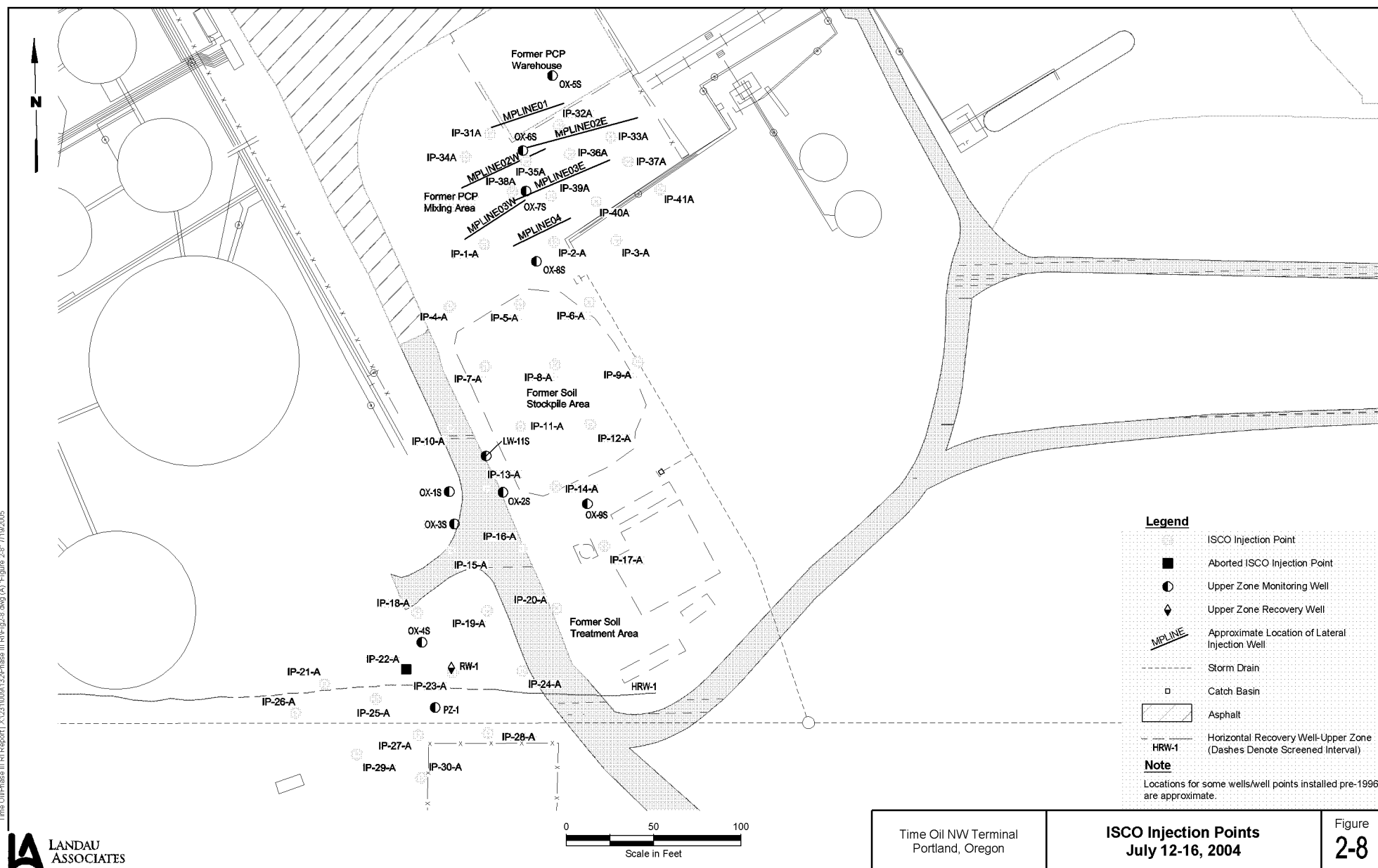


Time Oil NW Terminal
Portland, Oregon

**Removal Boundaries and Verification
Soil Sample cPAH Results
Former Crosby & Overton Tank Area**

Figure
2-6





Notes

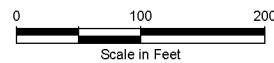
1. NA = Not Analyzed
ND = Not Detected
NS = Not Sampled
2. Wells located on the western portion of the Main Terminal Tank Farm area designated as lower zone wells have been included on this figure because of the interconnection between the upper zone and lower zone groundwater on this portion of the terminal.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

Legend

- Phase III Study Area Boundary
- PCP Concentration Contour ($\mu\text{g/L}$)
- LW-27S
No Sample Collected - Product Observed in Well at Time of Sample Collection
- LW-11S
Well Previously Contained Product
- Lower Zone Monitoring Well, Beyond Confining Unit Boundary
- Upper Zone Monitoring Well
- Upper Zone Recovery Well
- ISCO Injection Well
- Horizontal Recovery Well
- HRW-1
- Storm Drain
- Manhole
- Groundwater Sample Location Identifier and PCP Concentration ($\mu\text{g/L}$)
- Minimum Preliminary Screening Level ($3.0 \mu\text{g/L}$; National Recommended Water Quality Criteria, Organism Only; EPA 2002)

Approximate Extent of Confining Unit

Storm Drain Outfall



Time Oil NW Terminal
Portland, Oregon

Upper Zone PCP Concentrations
in ISCO Injection Area
June 2004

Figure
2-9

The map displays the Phase III Study Area Boundary, which is a rectangular area outlined in black. The boundary is labeled "Phase III Study Area Boundary" at the top. Inside the boundary, several monitoring wells are marked with symbols and labels: LW-27S (a circle with a dot), LW-11S (a circle with a dot), HRW-1 (a circle with a dot), and a well marked with a triangle. A legend on the right side of the map defines these symbols: LW-27S is "No Sample Collected - Product Observed in Well at Time of Sample Collection"; LW-11S is "Well Previously Contained Product"; a circle with a dot is "Lower Zone Monitoring Well, Beyond Confining Unit Boundary"; a circle with a dot is "Upper Zone Monitoring Well"; a diamond is "Upper Zone Recovery Well"; a triangle is "ISCO Injection Well"; and a circle with a dot is "Horizontal Recovery Well". A "Storm Drain" is shown as a line with arrows pointing away from the boundary. A "Manhole" is marked with a circle. A "Groundwater Sample Location Identifier and PCP Concentration (µg/L)" is indicated by a circle with a dot. A "Minimum Preliminary Screening Level (3.0 µg/L; National Recommended Water Quality Criteria, Organism Only; EPA 2002)" is noted at the bottom. A scale bar at the bottom left indicates distances from 0 to 100 feet. A north arrow is located in the top right corner. The text "Approximate Contour" is written near the top right corner.

Phase III Study Area Boundary

PCP Concentration Contour (µg/L)

LW-27S
● No Sample Collected - Product Observed in Well at Time of Sample Collection

LW-11S
● Well Previously Contained Product

● Lower Zone Monitoring Well, Beyond Confining Unit Boundary

● Upper Zone Monitoring Well

◆ Upper Zone Recovery Well

▲ ISCO Injection Well

○ Horizontal Recovery Well

HRW-1

Storm Drain

○ Manhole

Groundwater Sample Location Identifier and PCP Concentration (µg/L)

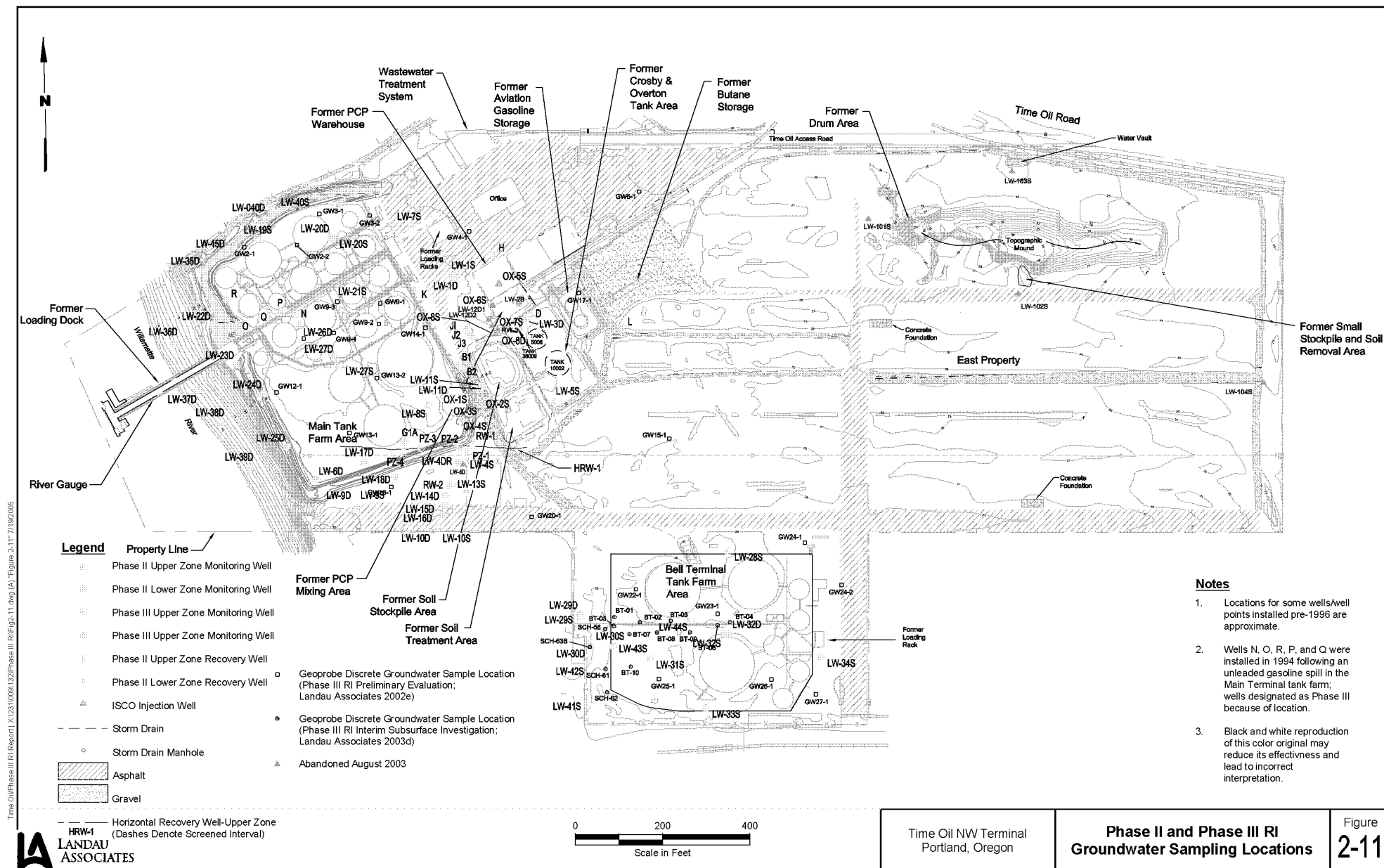
Minimum Preliminary Screening Level (3.0 µg/L; National Recommended Water Quality Criteria, Organism Only; EPA 2002)

Approximate Contour

0 100 Feet

North Arrow







LANDAU
ASSOCIATES

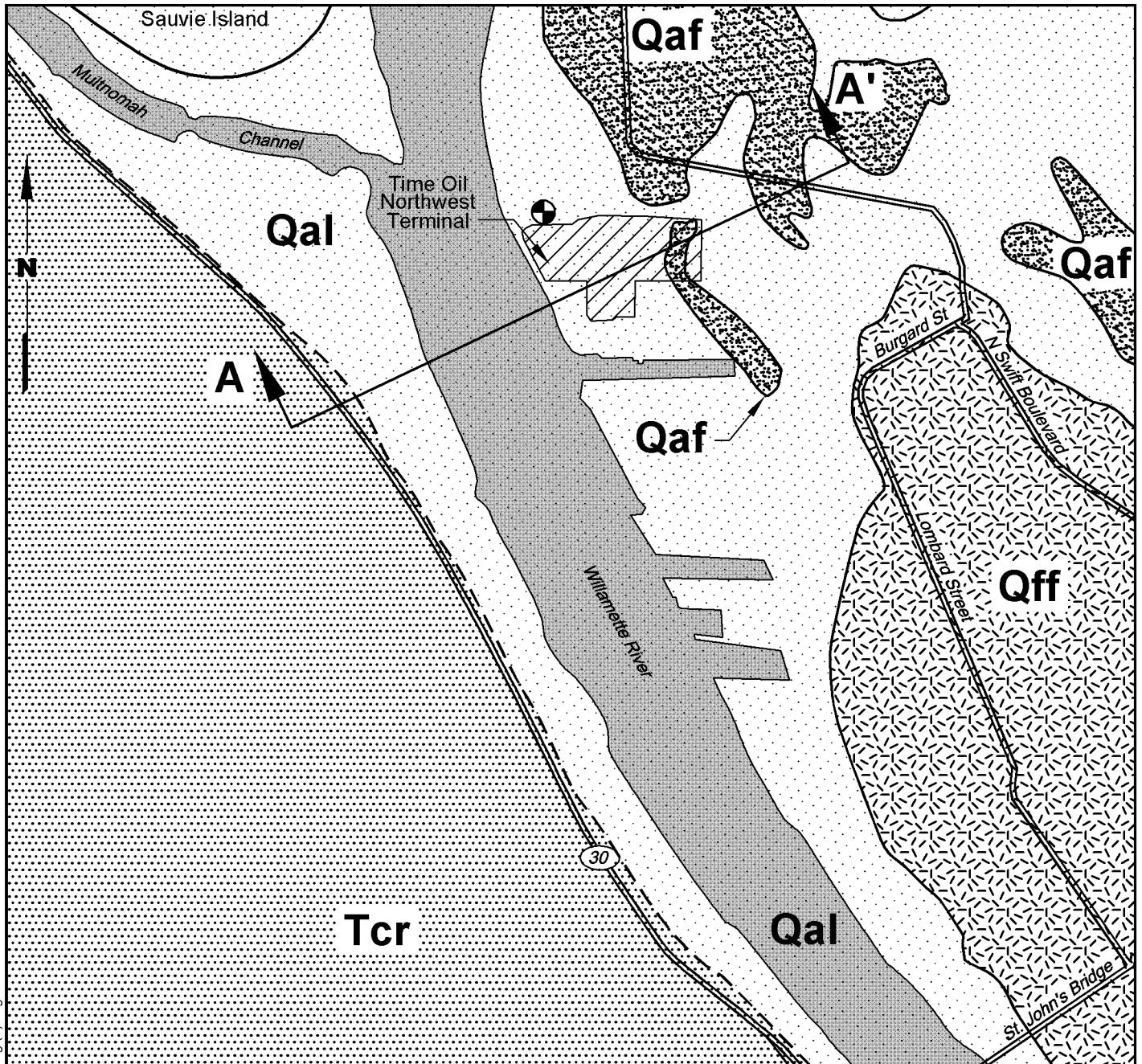
Time Oil NW Terminal
Portland, Oregon

Historical Aerial Photograph – 1939

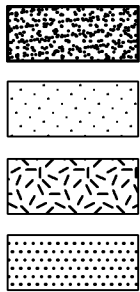
Figure
2-12



Time Oil/Phase III RI Report | X:\231009\132\Phase III RI\Fig3-1.dwg (A) "Figure 3-1" 7/19/2005



Legend



- Qaf** Imported fill (Recent)
- Qal** Alluvium (Recent)
- Qff** Catastrophic Flood Deposits- Fine-grained facies (Pleistocene)
- Tcr** Undifferentiated Columbia River Basalt Group (middle Miocene)



- Portland Hills Fault
- Port of Portland Well



Location of regional geologic cross section

0 2000 4000
Scale in Feet

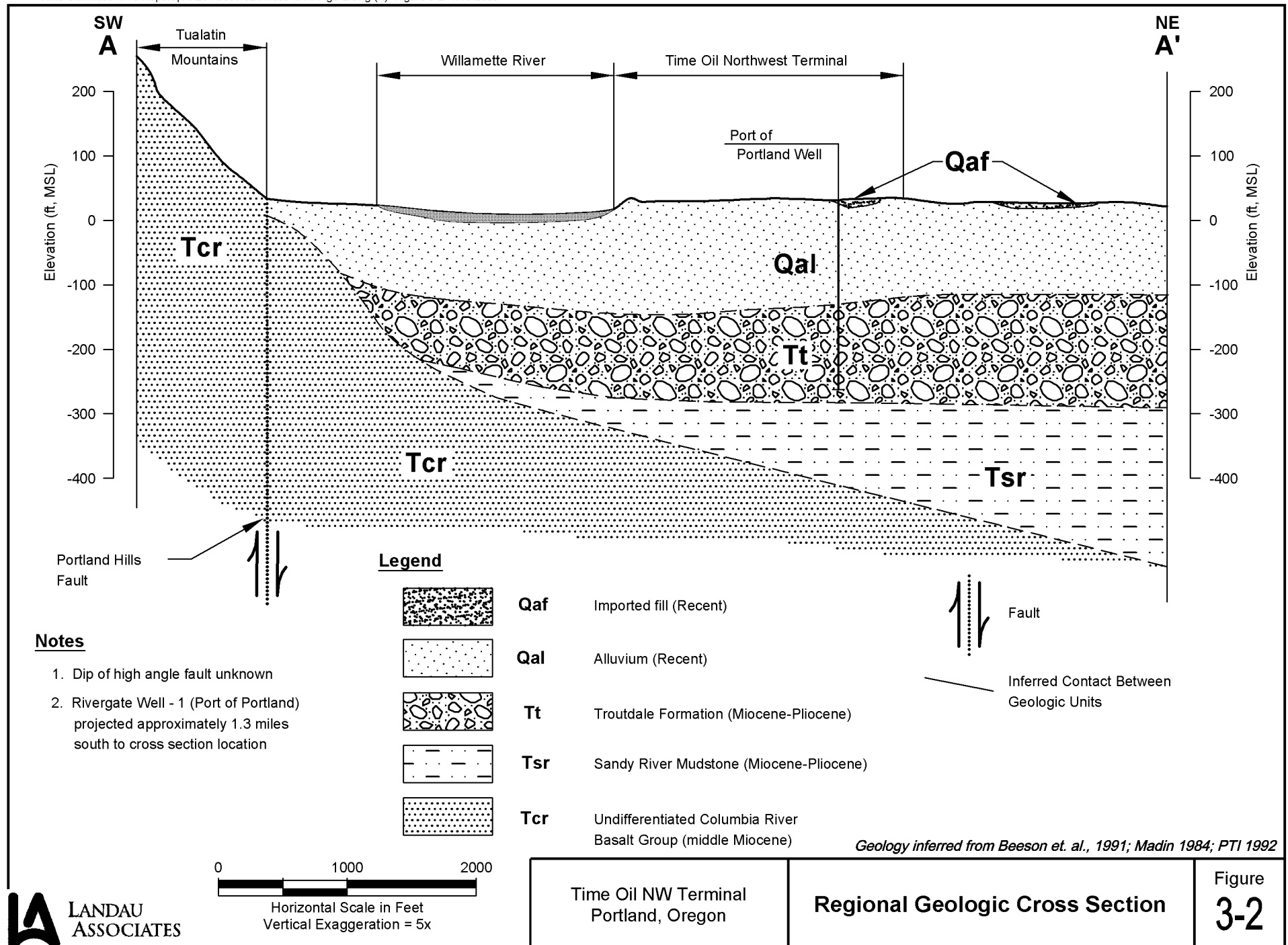
Geology inferred from: Beeson et. al., 1991; Madin 1984

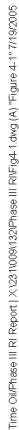


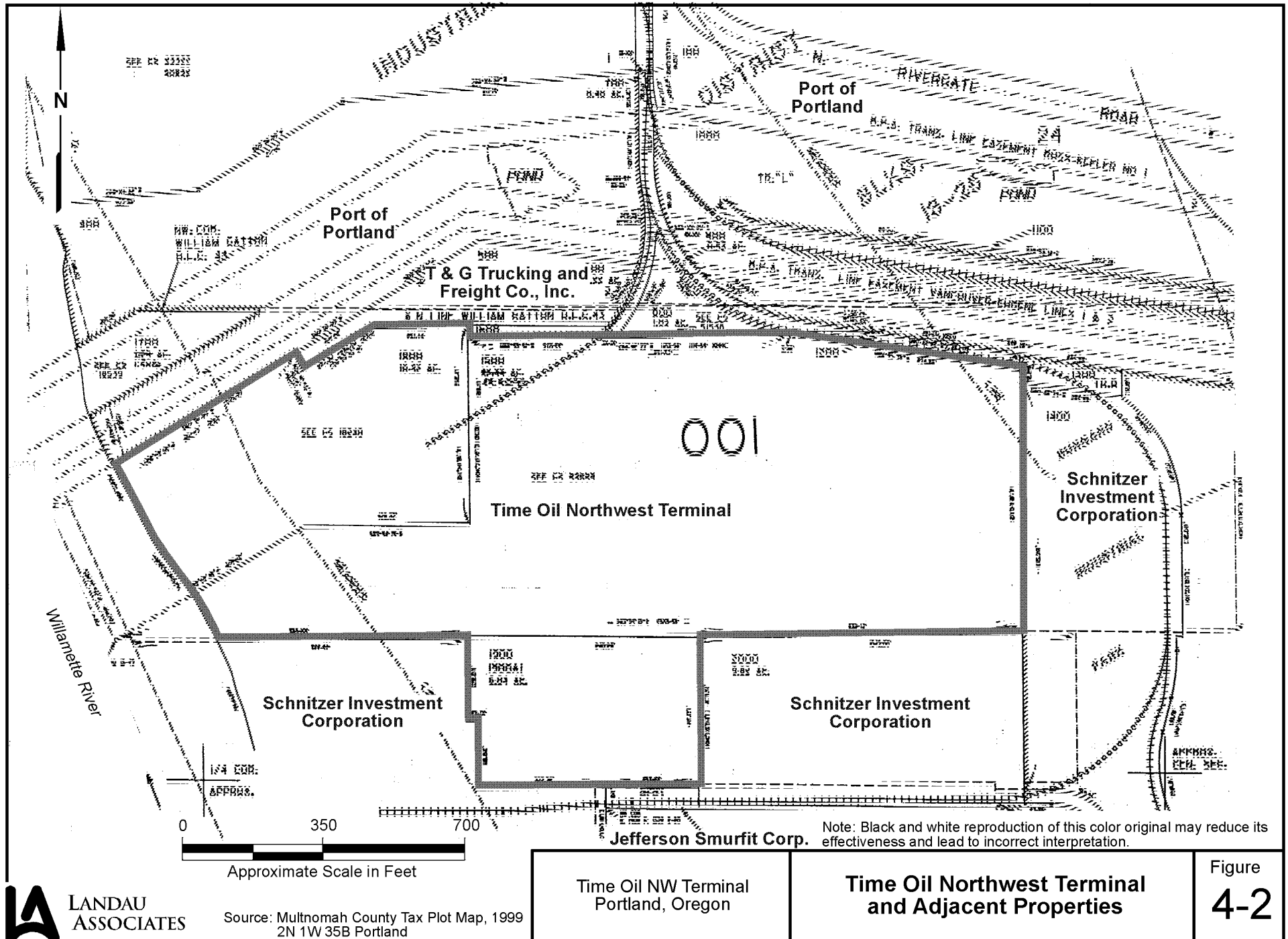
Time Oil NW Terminal
Portland, Oregon

**Regional Surficial Geology and
Cross Section Location**

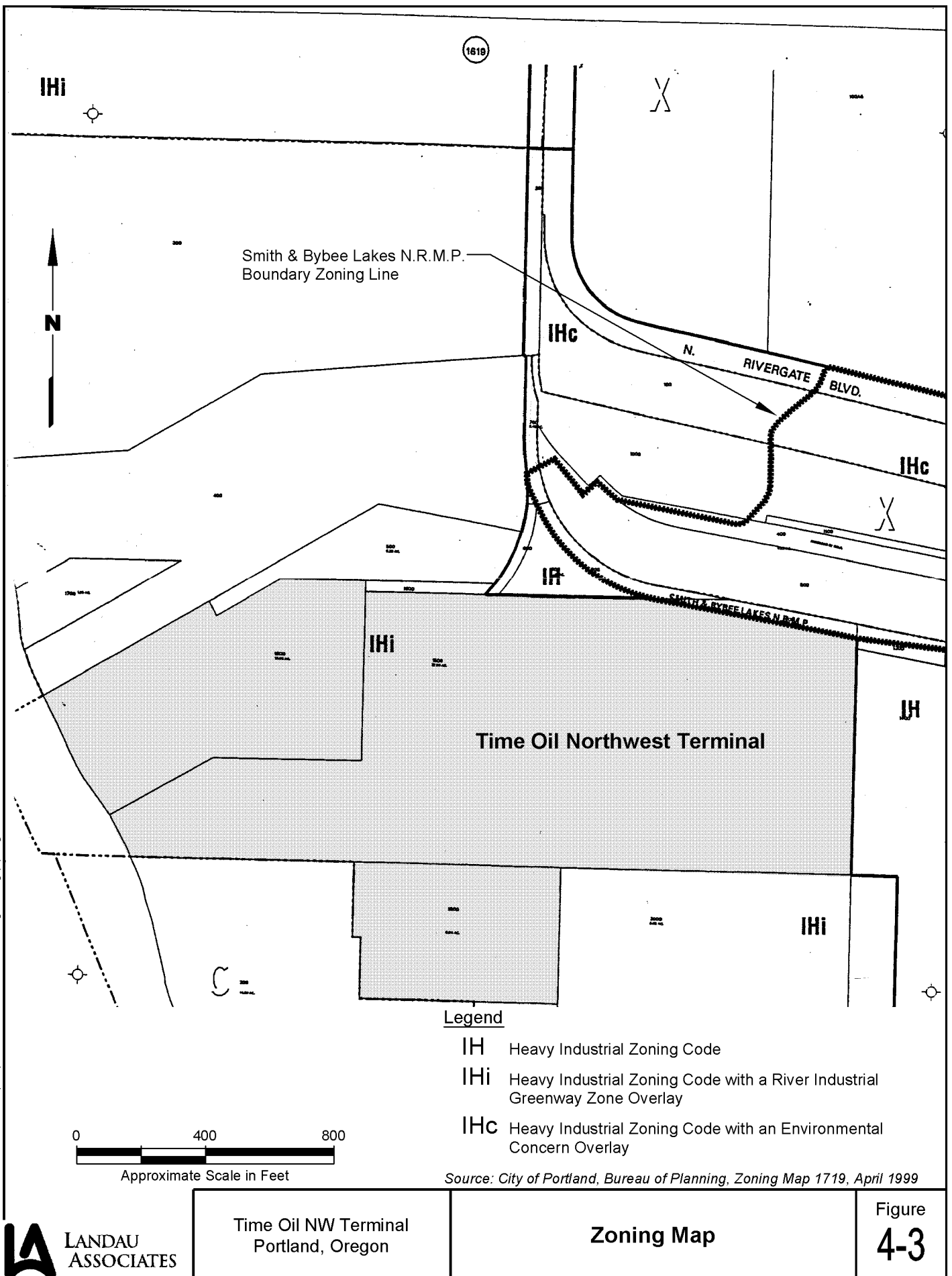
Figure
3-1

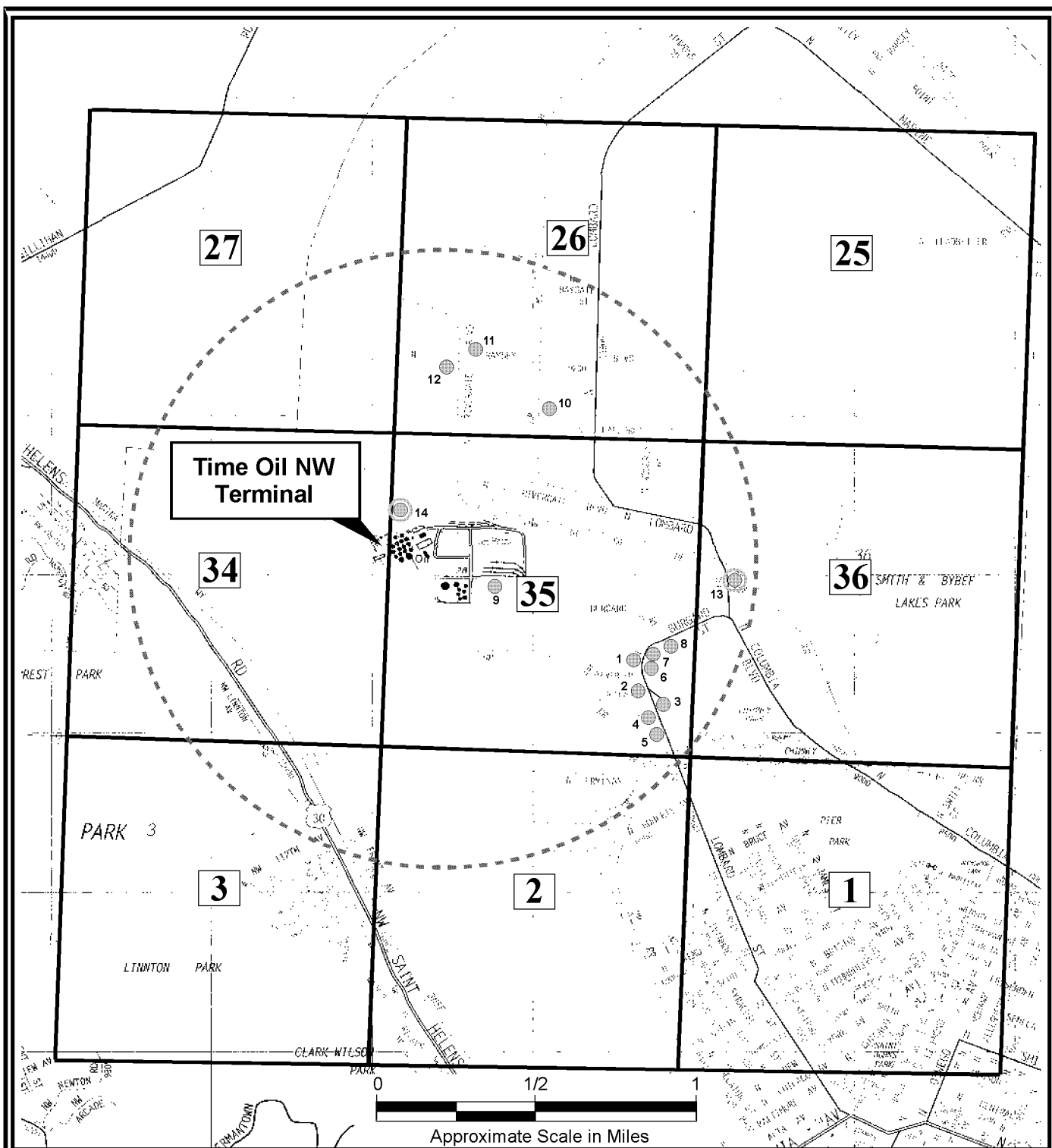






Time Oil/Phase III RI Report | X:\231\009\132\Phase III RI\Fig4-3.dwg (A) 'Figure 4-3' 7/19/2005





- Legend**
- One Mile Radius
 - 1** Section and Section Number
 - Approximate Offsite Well Location and Identification Number
 - Approximate Offsite Irrigation Well Location and Identification Number

Notes

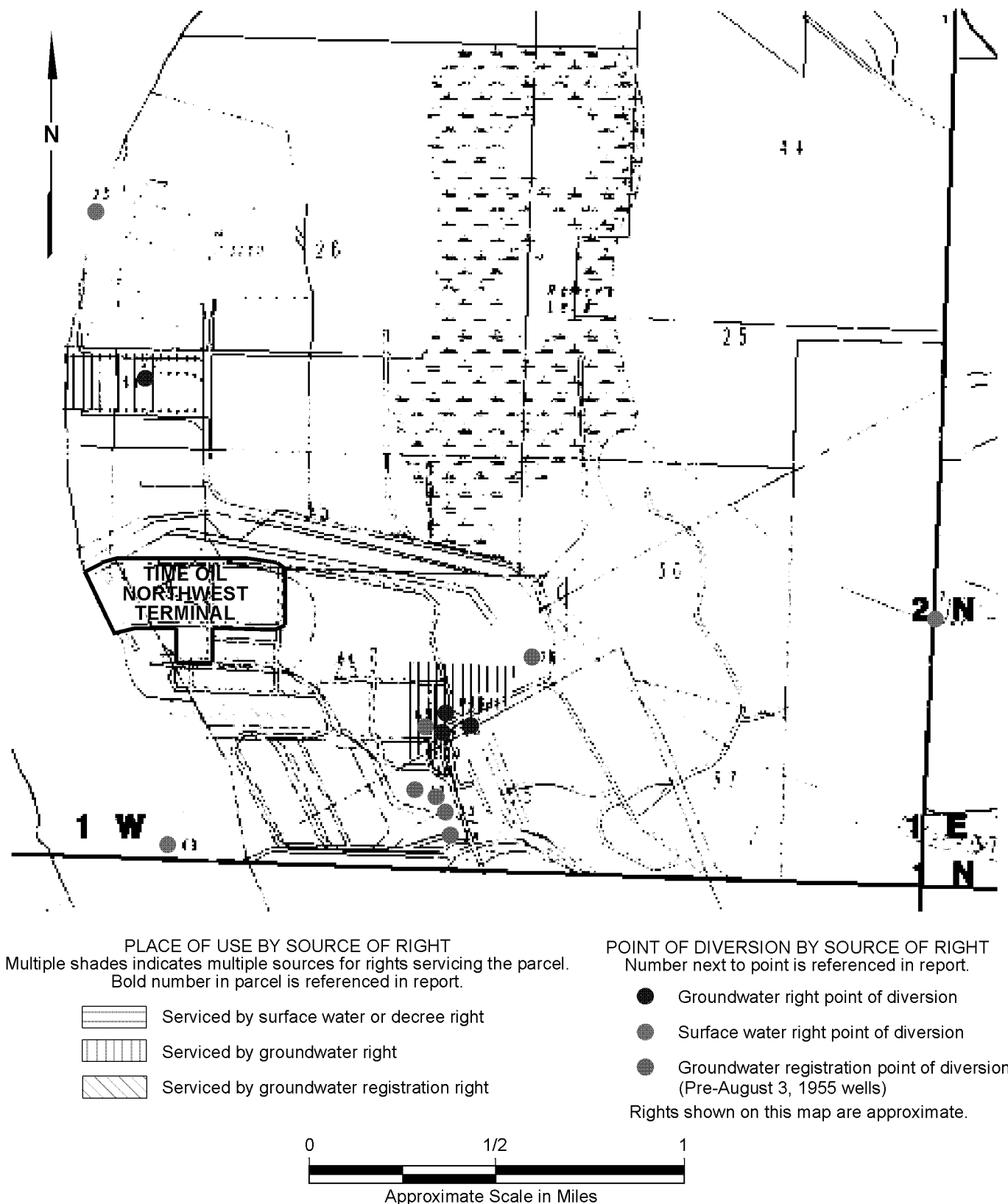
1. Much of the map area was originally surveyed as private donation land claim prior to establishment of the public land system and conventional section boundaries. Accordingly, many of the section boundaries on this figure are inferred.
2. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.



Time Oil NW Terminal
Portland, Oregon

Well Inventory Results

Figure
4-4



Note: Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.

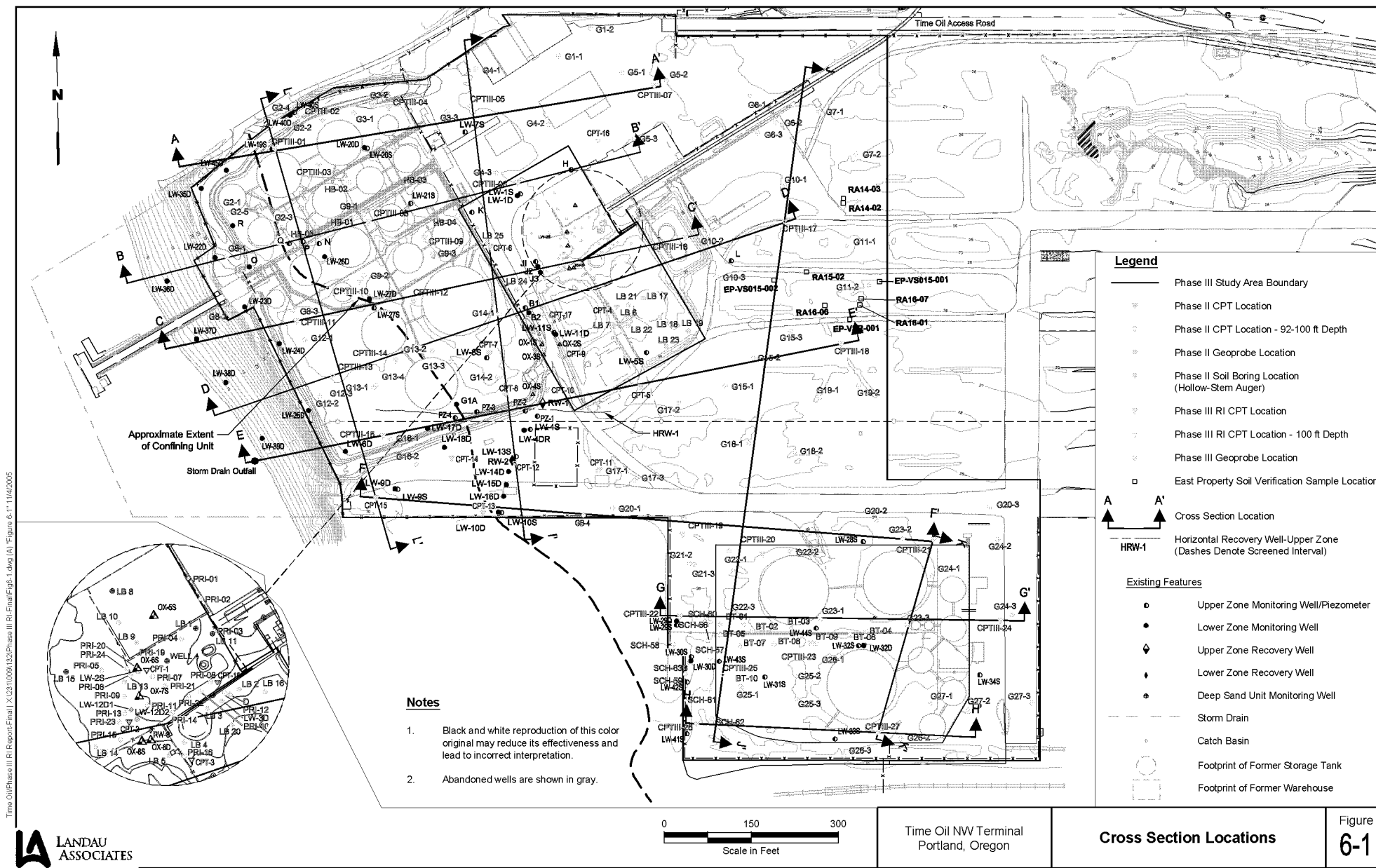
Source: Oregon Water Resources Department 1999

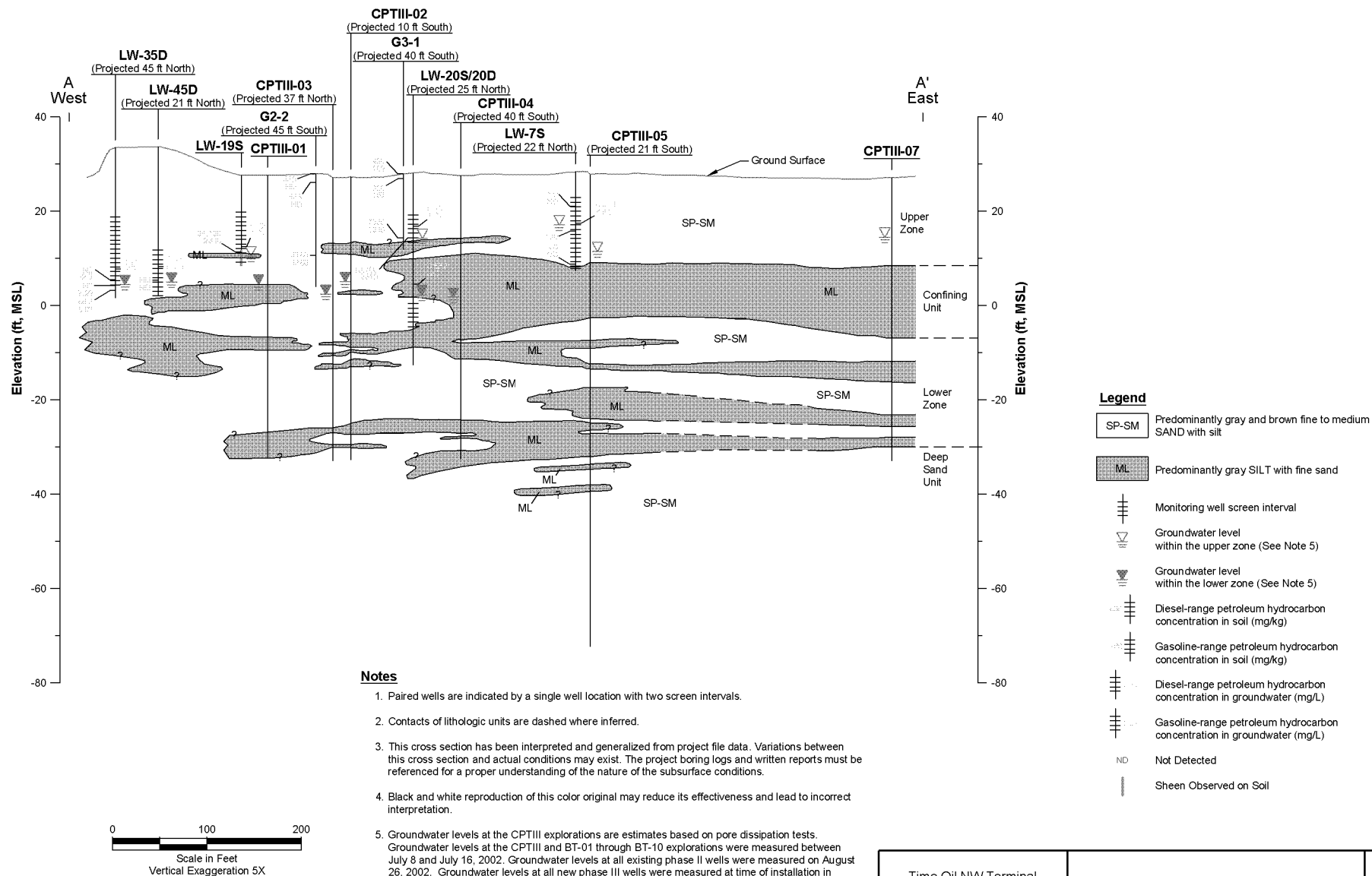


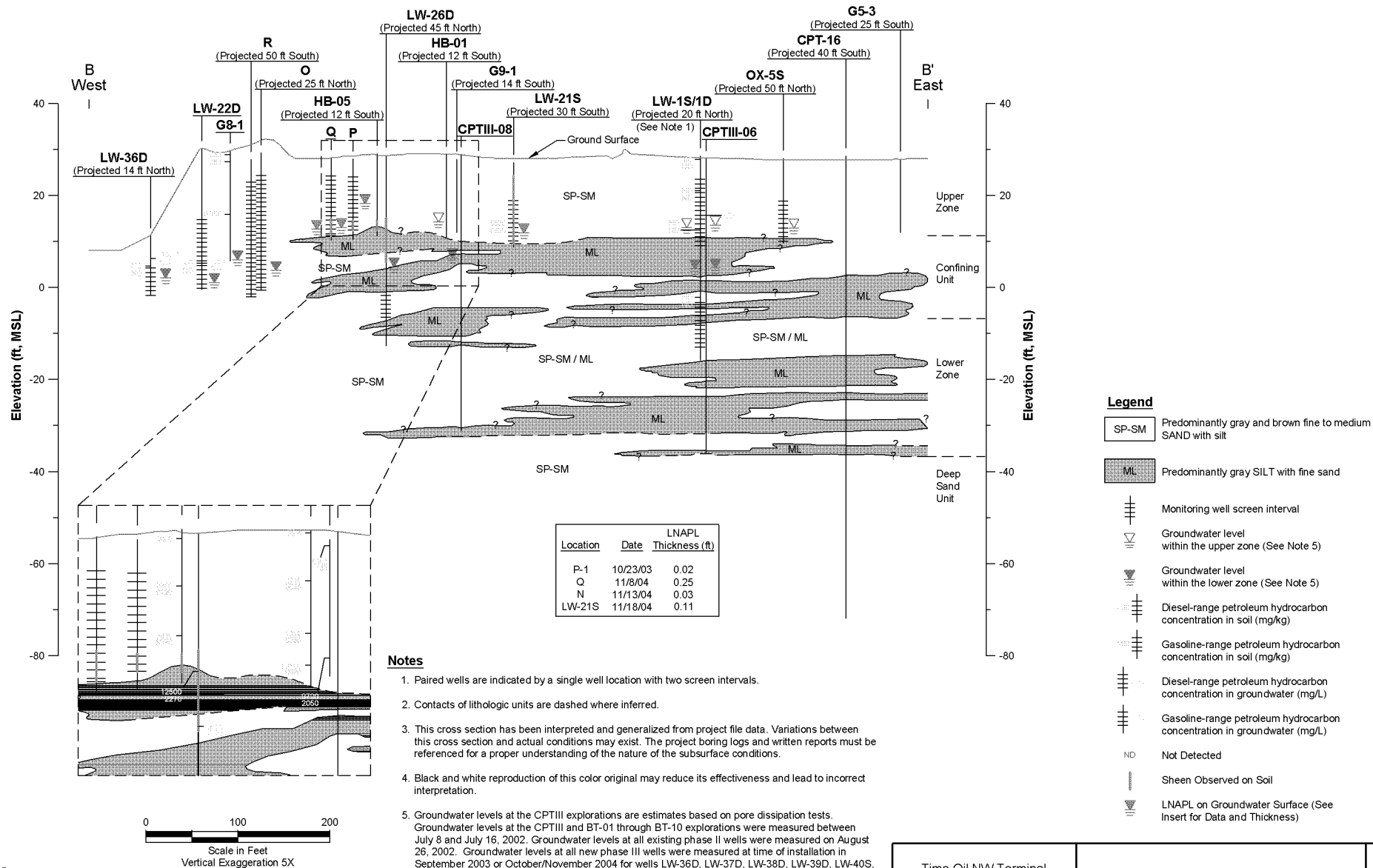
Time Oil NW Terminal
Portland, Oregon

**Water Rights -Time Oil
Northwest Terminal and Vicinity**

Figure
4-5

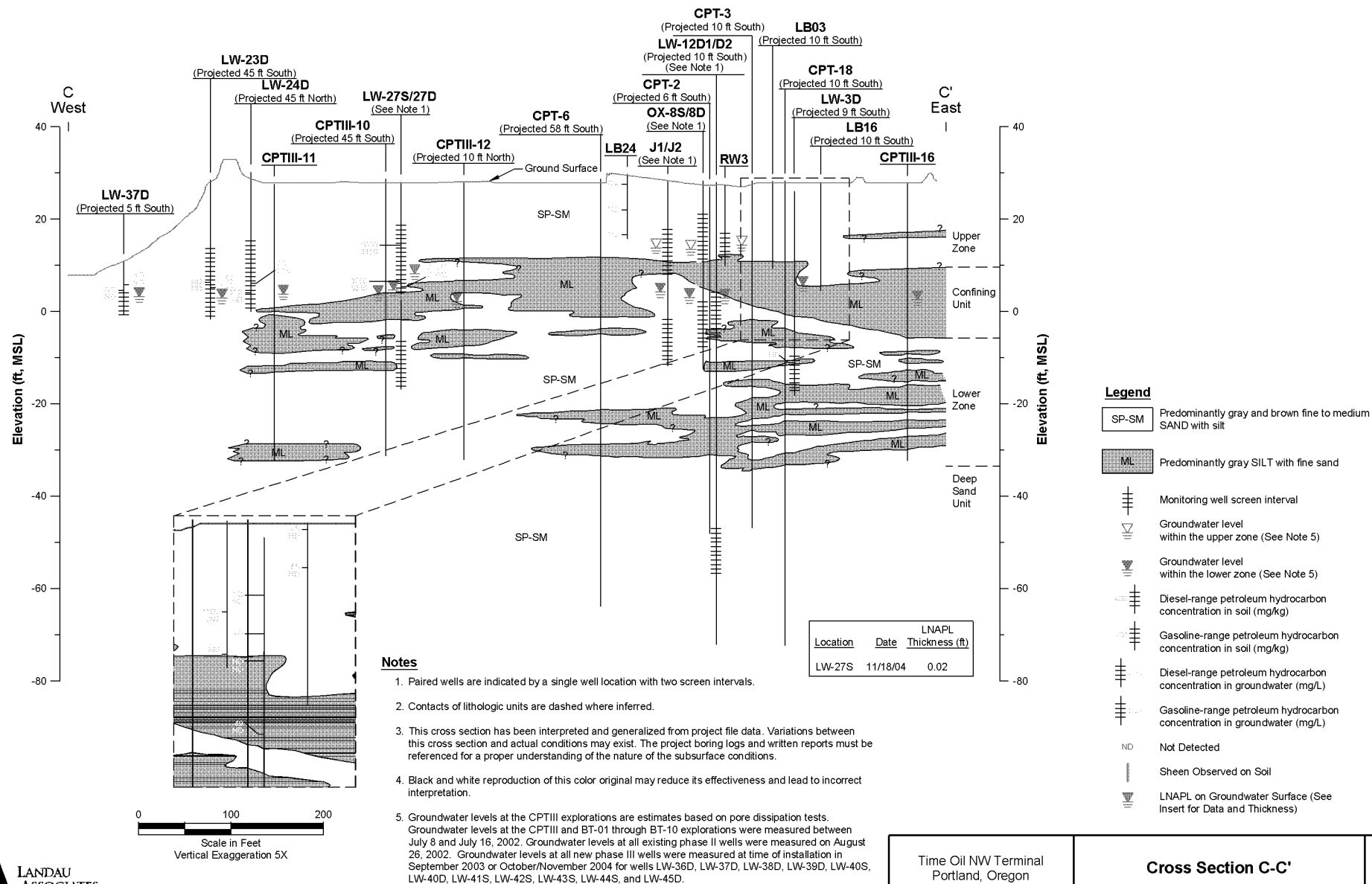




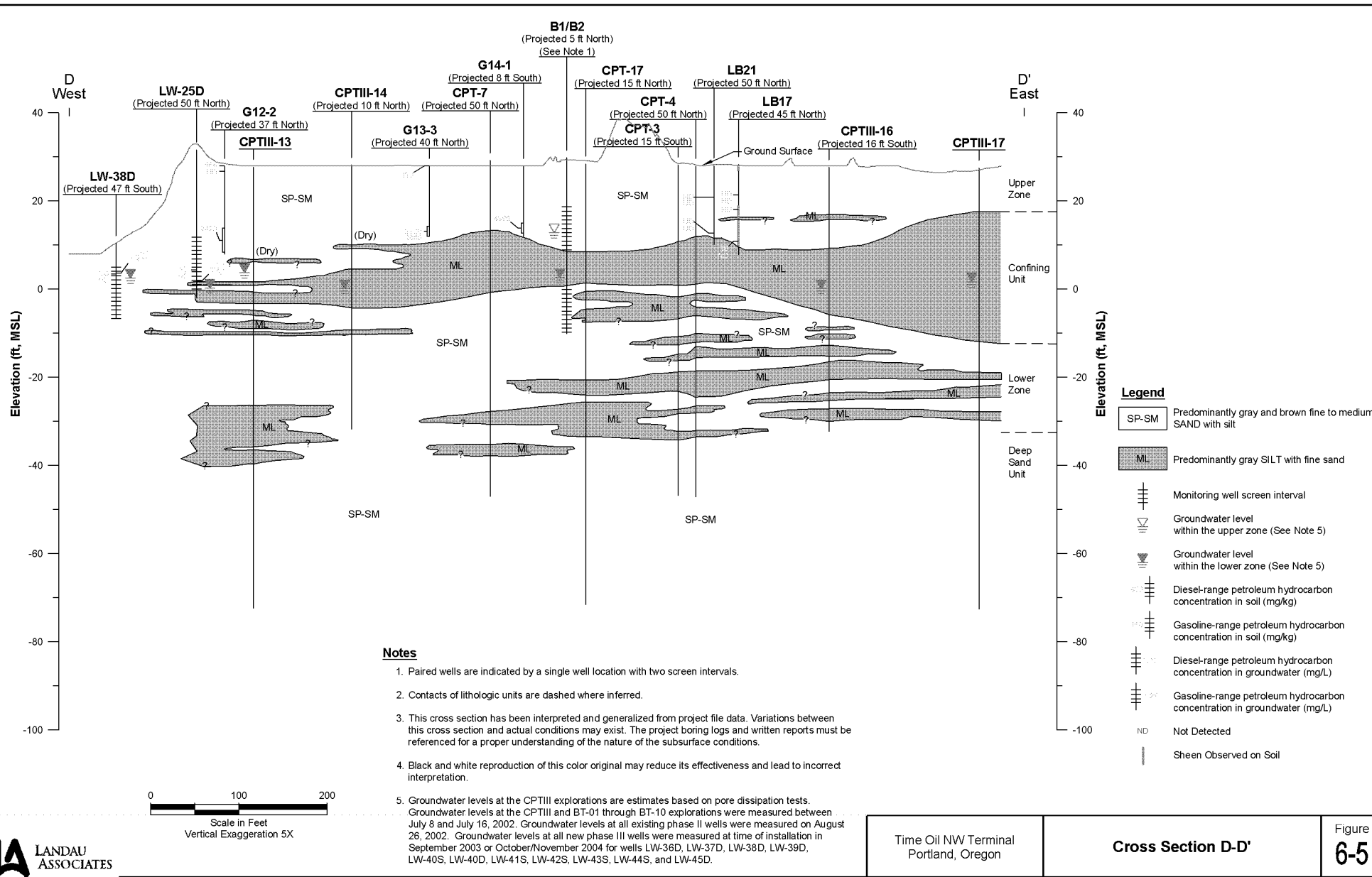
Time Oil NW Terminal
Portland, Oregon

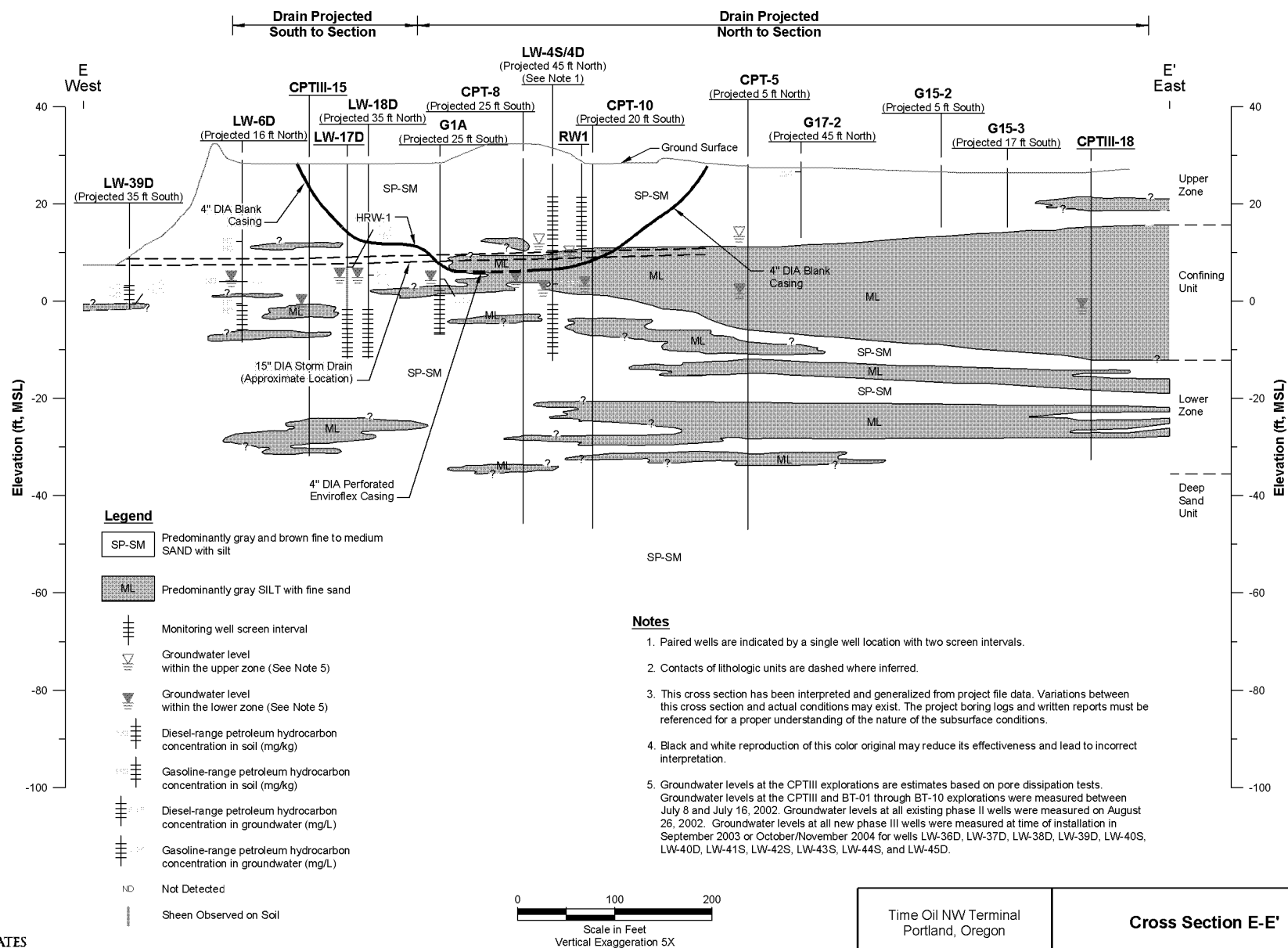
Cross Section B-B'

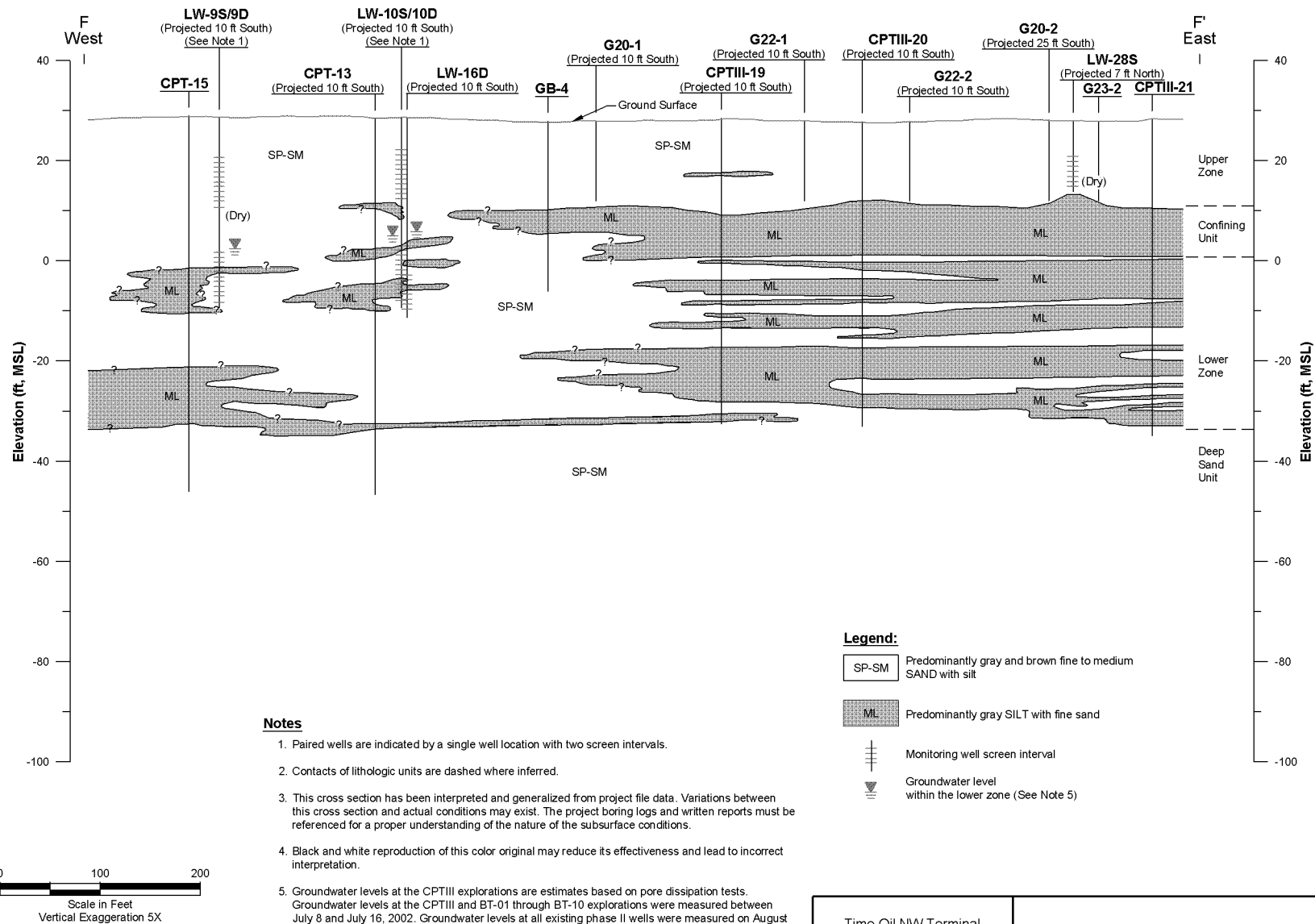
Figure
6-3



Time OilPhase II RI Report \X\23\1004\123Phase II RI\Fig6-5.dwg (A) Figure 6-5 7/19/2005

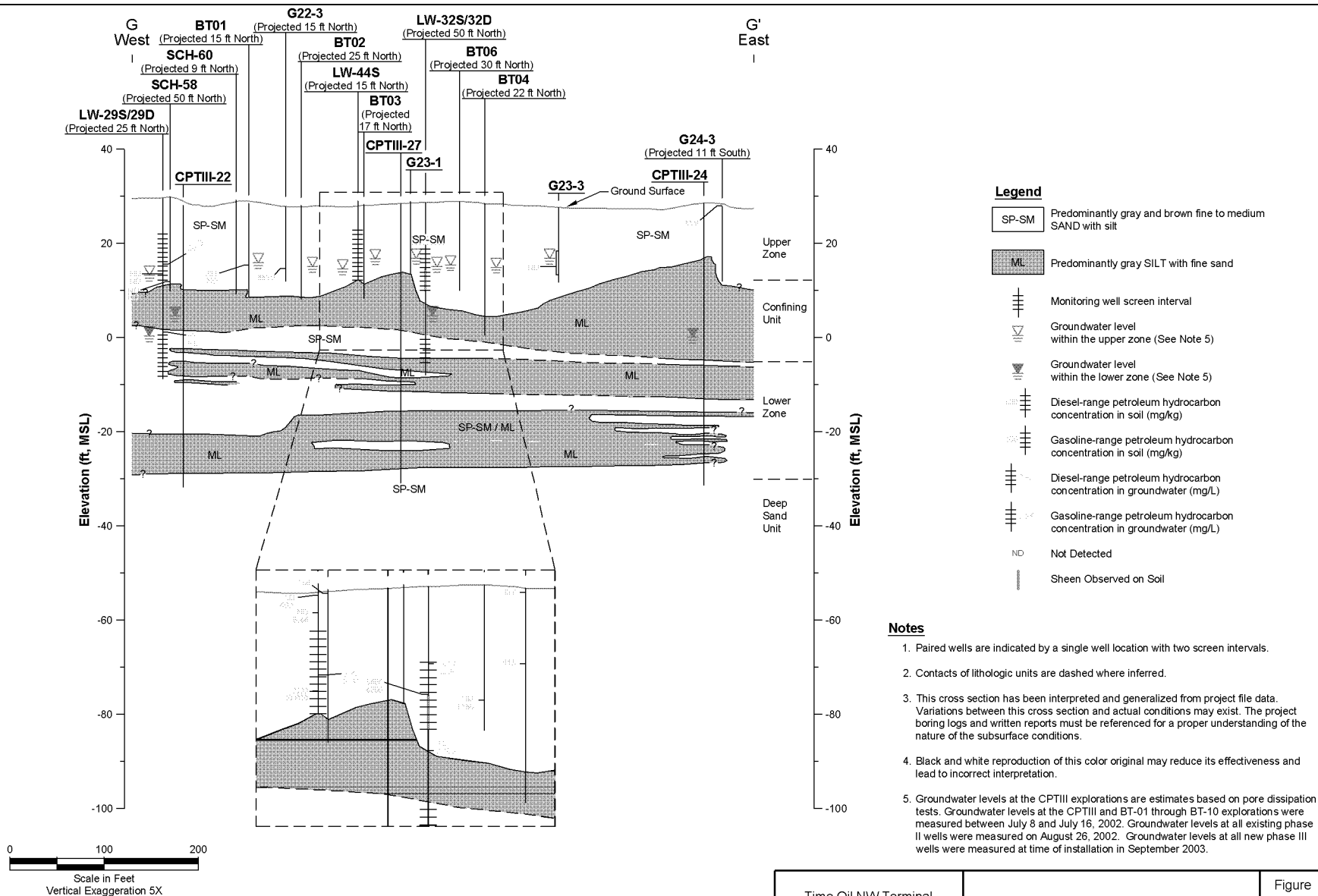




Time Oil NW Terminal
Portland, Oregon

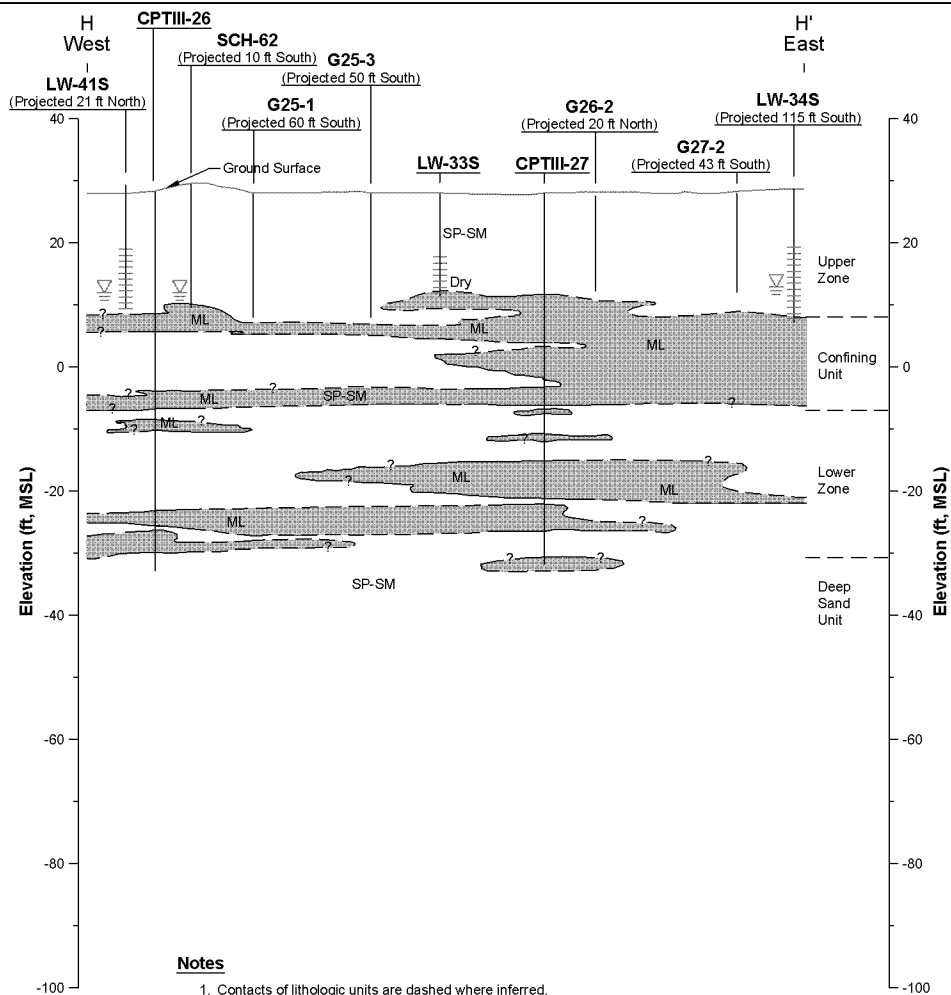
Cross Section F-F'

Figure
6-7





0 100 200
Scale in Feet
Vertical Exaggeration 5X



Notes

1. Contacts of lithologic units are dashed where inferred.
2. This cross section has been interpreted and generalized from project file data. Variations between this cross section and actual conditions may exist. The project boring logs and written reports must be referenced for a proper understanding of the nature of the subsurface conditions.
3. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
4. Groundwater levels at all new phase III wells were measured at time of installation in September 2003. The groundwater level at temporary well point, SCH-62, was measured on October 9, 2001.

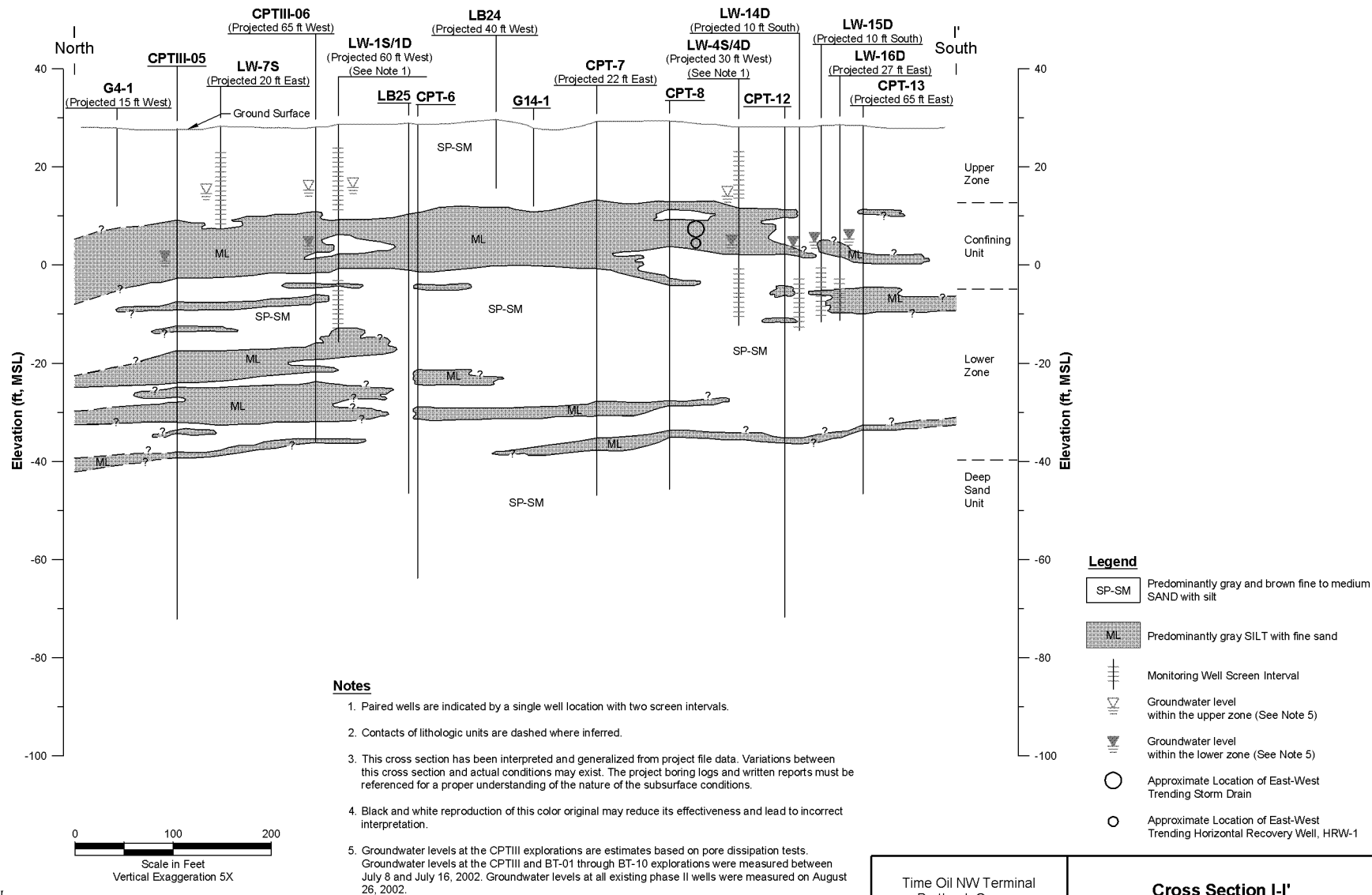
Legend

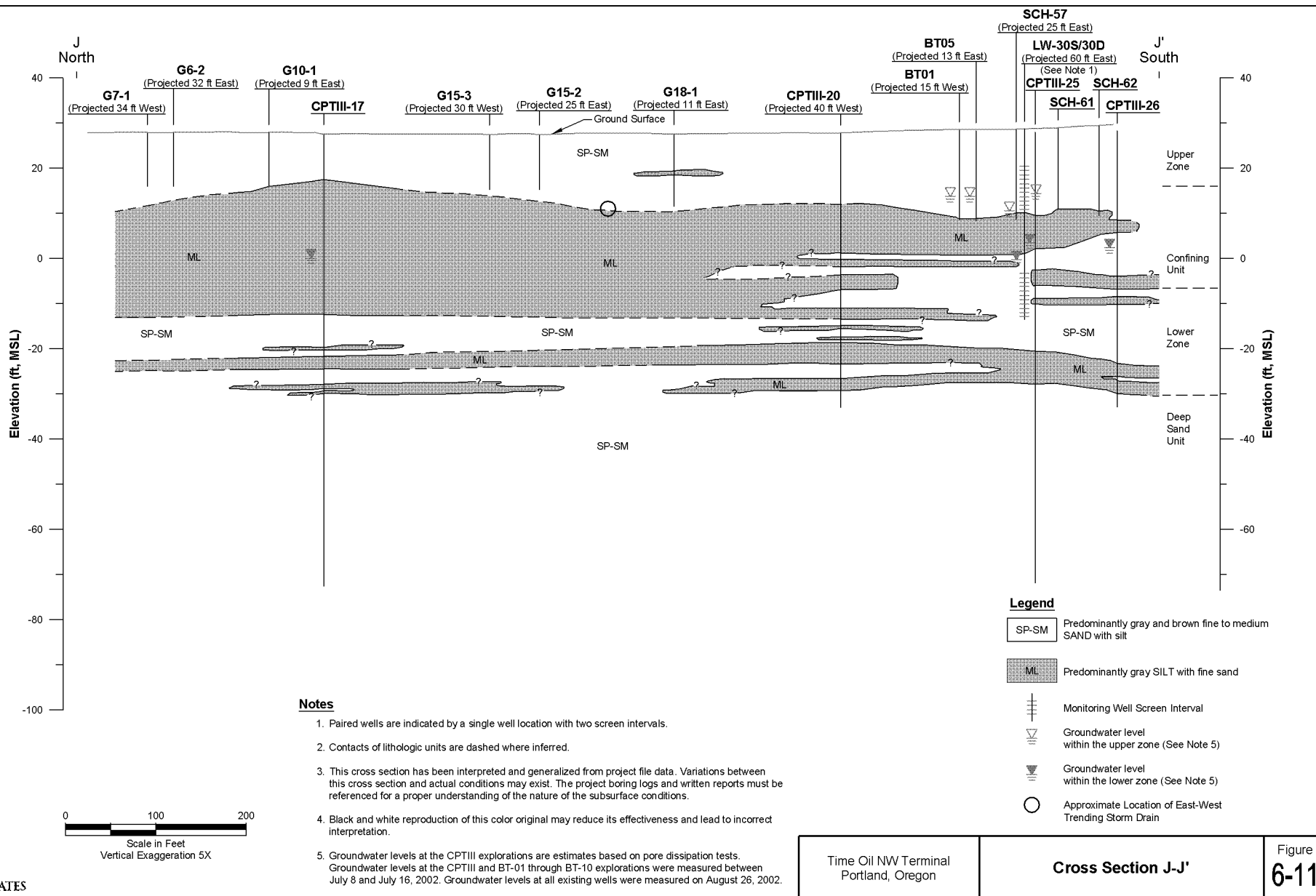
- SP-SM Predominantly gray and brown fine to medium SAND with silt
- ML Predominantly gray SILT with fine sand
- Monitoring Well Screen Interval
- Groundwater level within the upper zone (See Note 4)

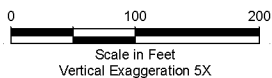
Time Oil NW Terminal
Portland, Oregon

Cross Section H-H'

Figure
6-9

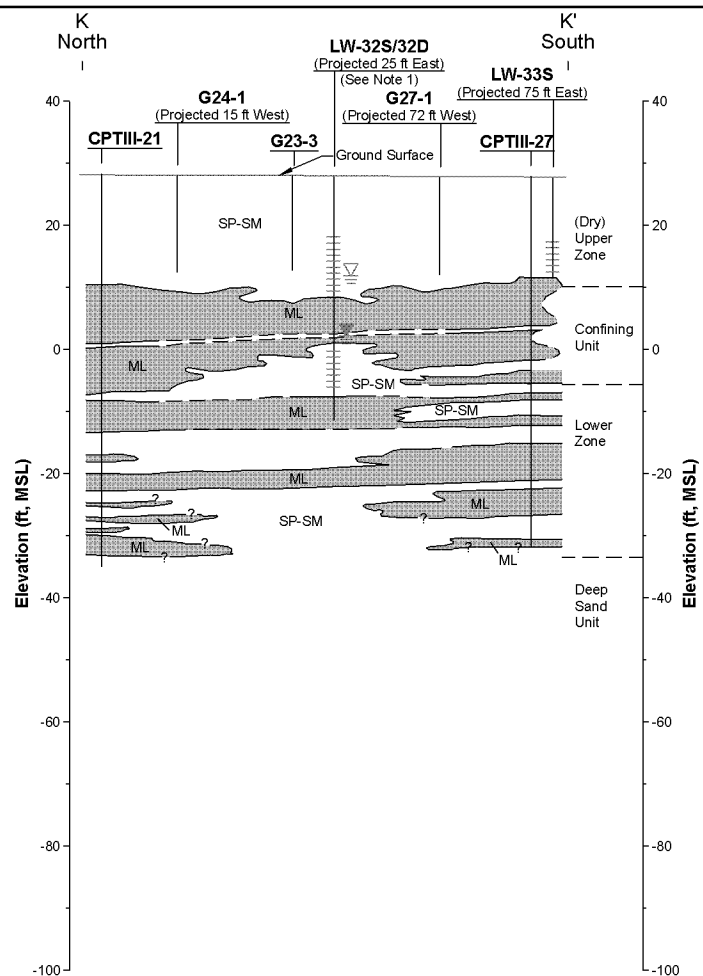






Notes

1. Paired wells are indicated by a single well location with two screen intervals.
2. Contacts of lithologic units are dashed where inferred.
3. This cross section has been interpreted and generalized from project file data. Variations between this cross section and actual conditions may exist. The project boring logs and written reports must be referenced for a proper understanding of the nature of the subsurface conditions.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
5. Groundwater levels at all new phase III wells were measured at time of installation in September 2003.



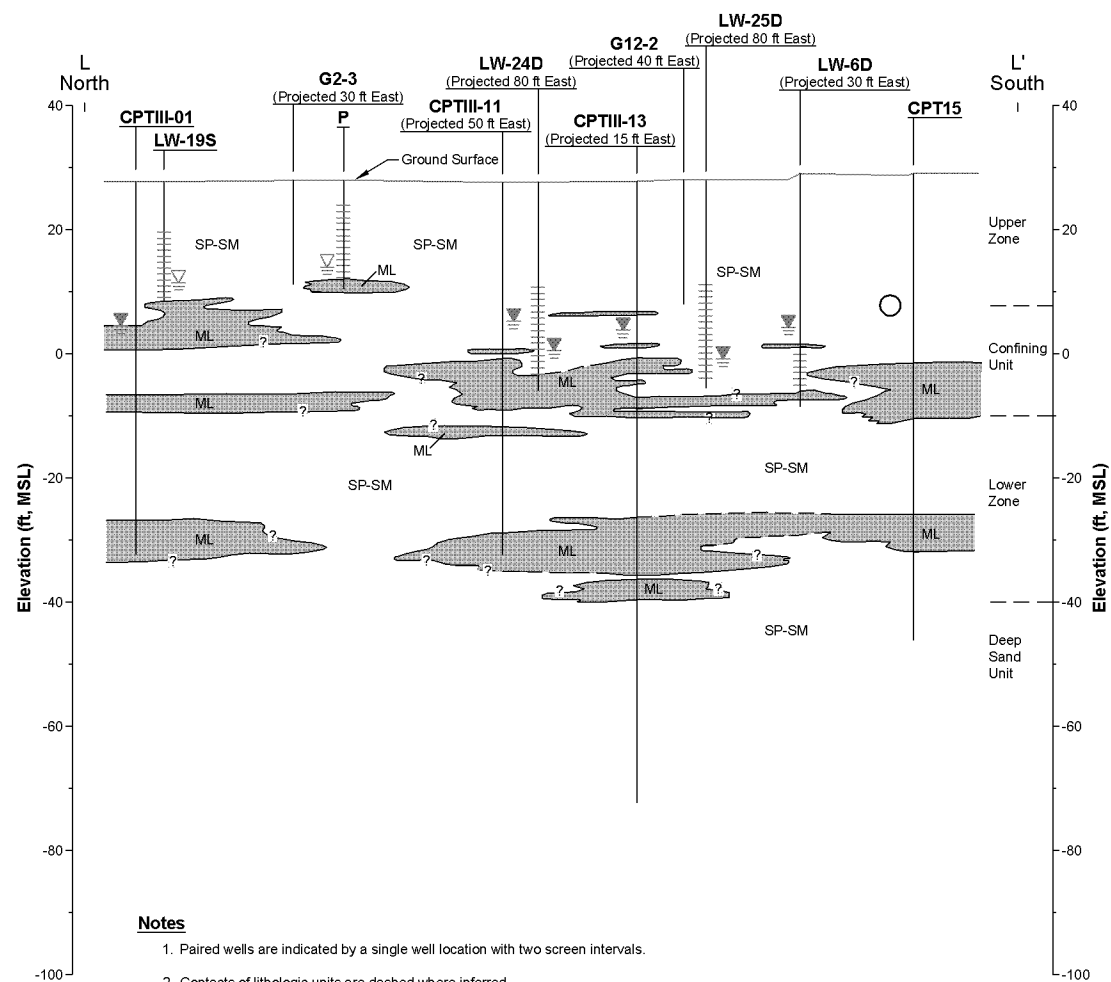
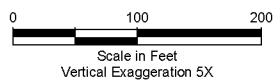
Legend

- SP-SM Predominantly gray and brown fine to medium SAND with silt
- ML Predominantly gray SILT with fine sand
- Monitoring Well Screen Interval
- Groundwater level within the upper zone (See Note 5)
- Groundwater level within the lower zone (See Note 5)

Time Oil NW Terminal
Portland, Oregon

Cross Section K-K'

Figure
6-12



Notes

1. Paired wells are indicated by a single well location with two screen intervals.
2. Contacts of lithologic units are dashed where inferred.
3. This cross section has been interpreted and generalized from project file data. Variations between this cross section and actual conditions may exist. The project boring logs and written reports must be referenced for a proper understanding of the nature of the subsurface conditions.
4. Black and white reproduction of this color original may reduce its effectiveness and lead to incorrect interpretation.
5. Groundwater levels at the CPTIII explorations are estimates based on pore dissipation tests. Groundwater levels at the CPTIII and BT-01 through BT-10 explorations were measured between July 8 and July 16, 2002. Groundwater levels at all existing phase II wells were measured on August 26, 2002. Groundwater levels at all new phase III wells were measured at time of installation in September 2003.

Legend

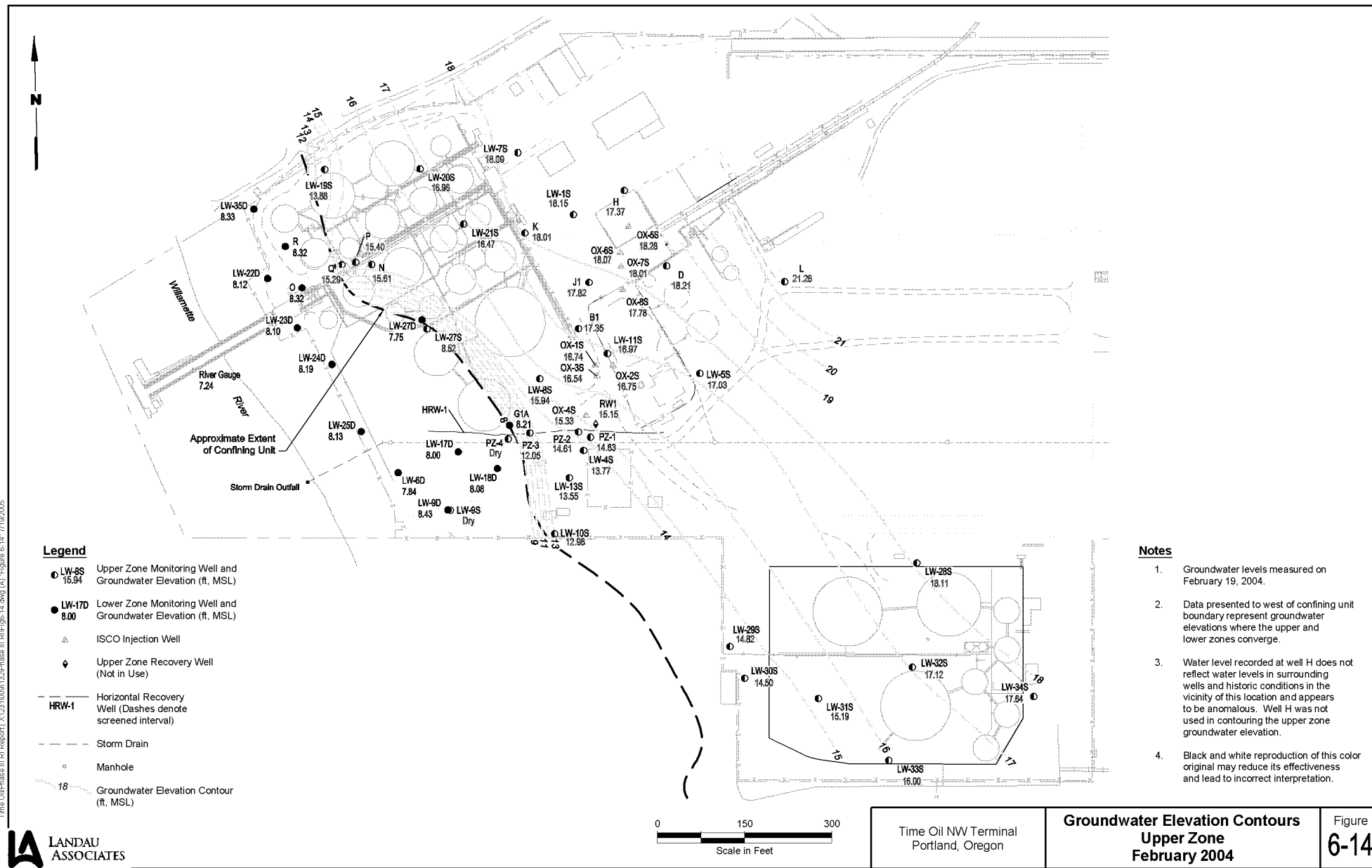
- SP-SM Predominantly gray and brown fine to medium SAND with silt
- ML Predominantly gray SILT with fine sand
- Monitoring Well Screen Interval
- Groundwater level within the upper zone (See Note 5)
- Groundwater level within the lower zone (See Note 5)
- Approximate Location of East-West Trending Storm Drain

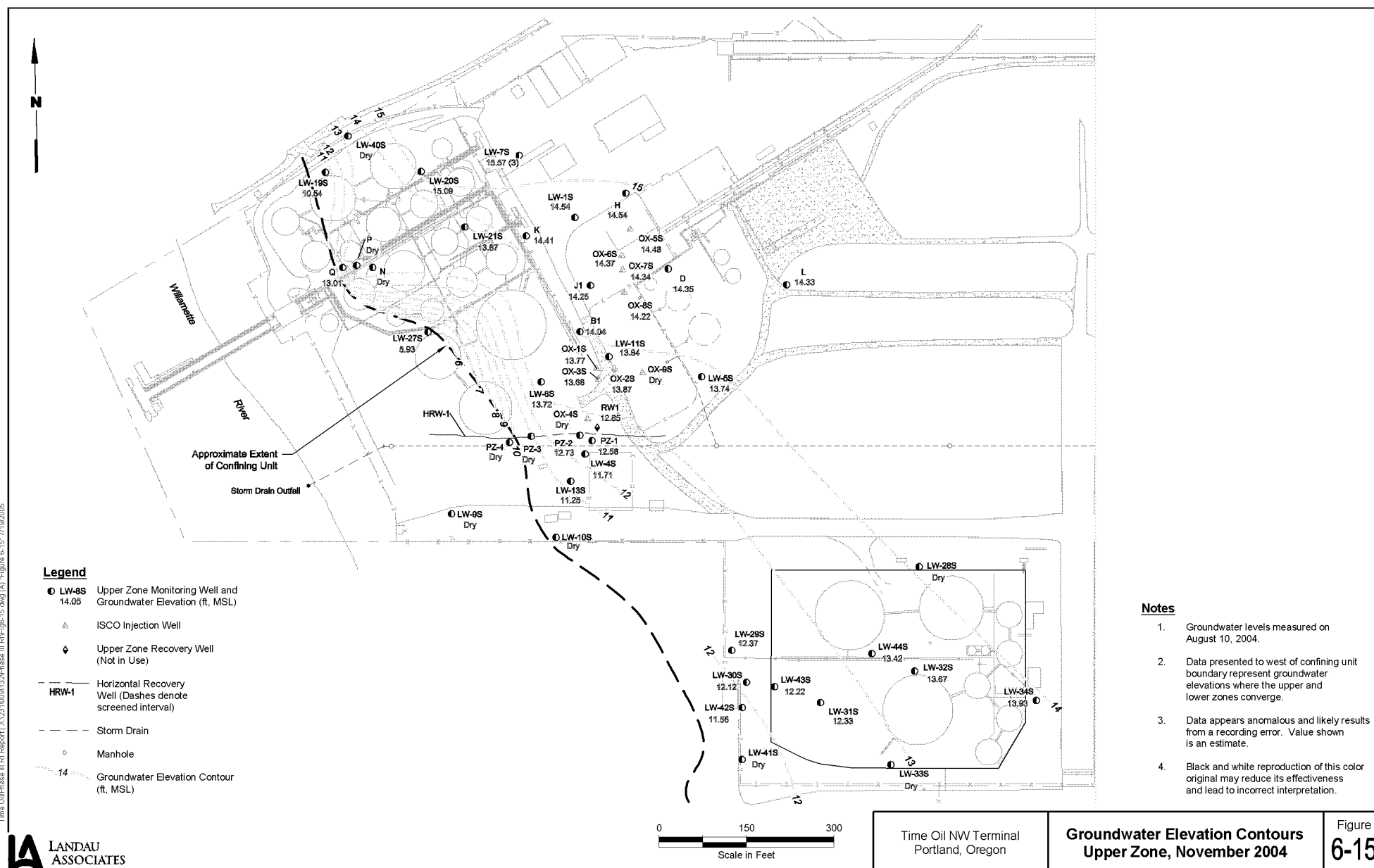
Time Oil NW Terminal
Portland, Oregon

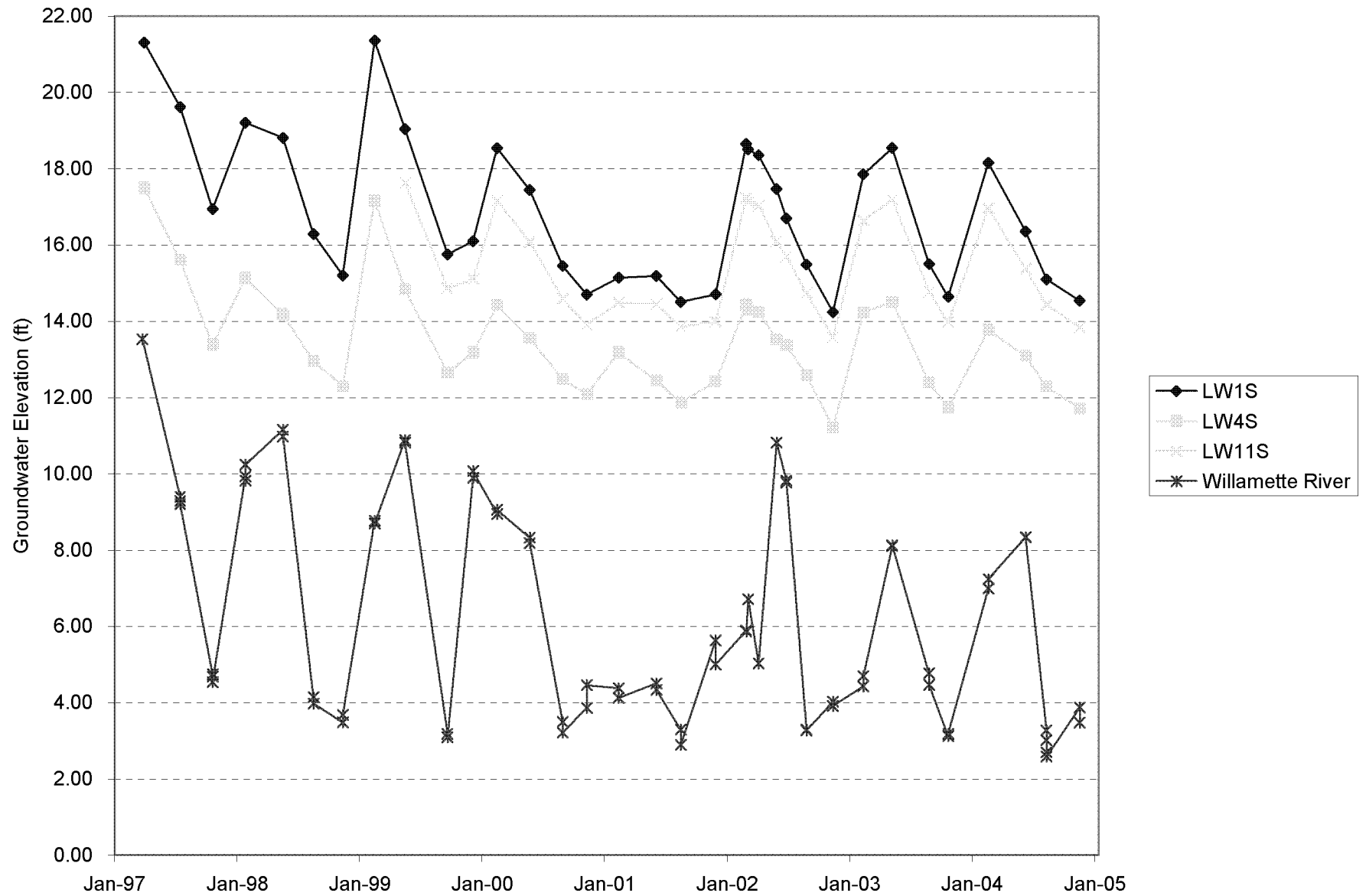
Cross Section L-L'

Figure
6-13

Time OilPhase III RI Report X:\231009\132Phase III RI\Fig 6-14.dwg (A) Figure 6-14 7/19/2005



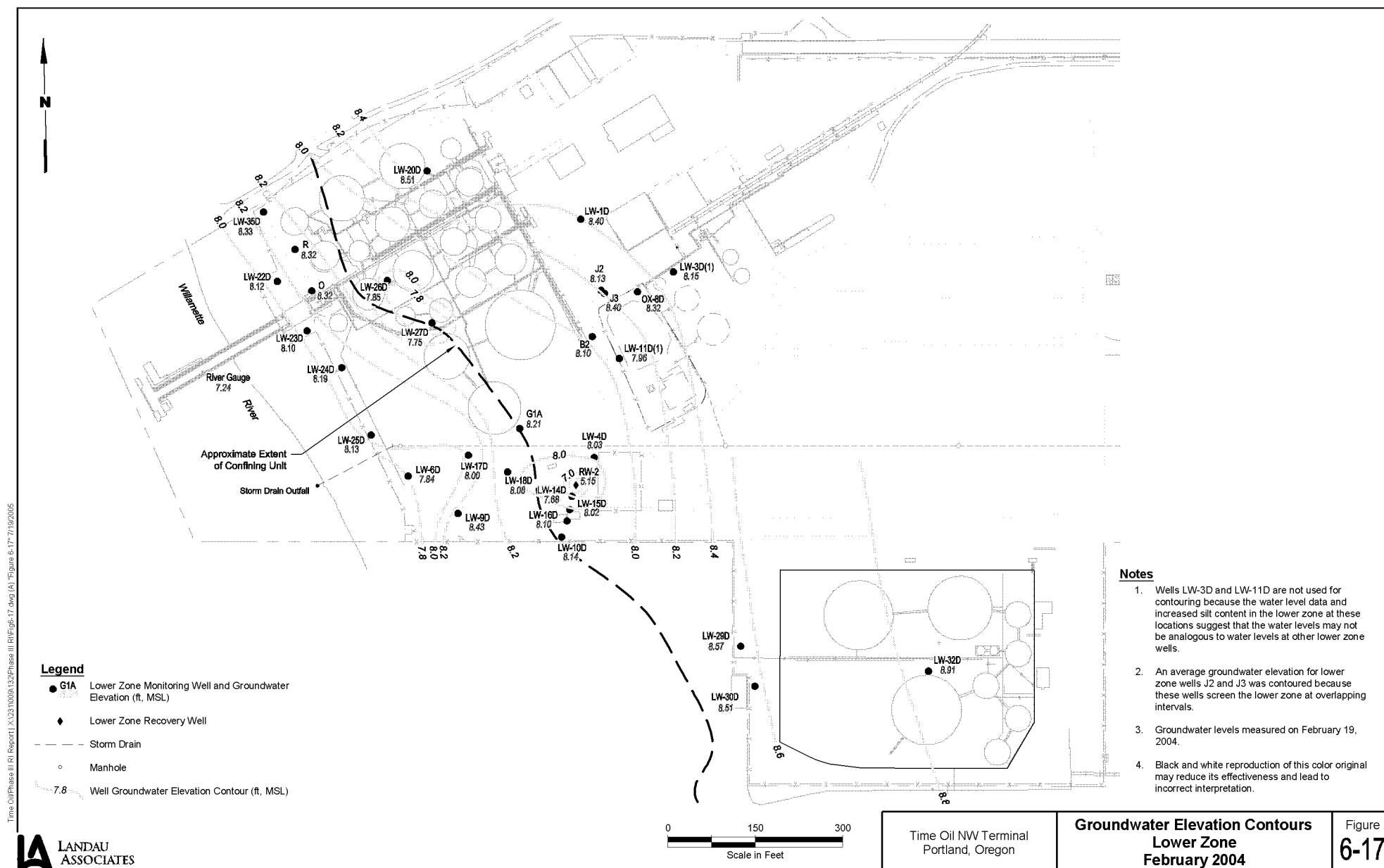


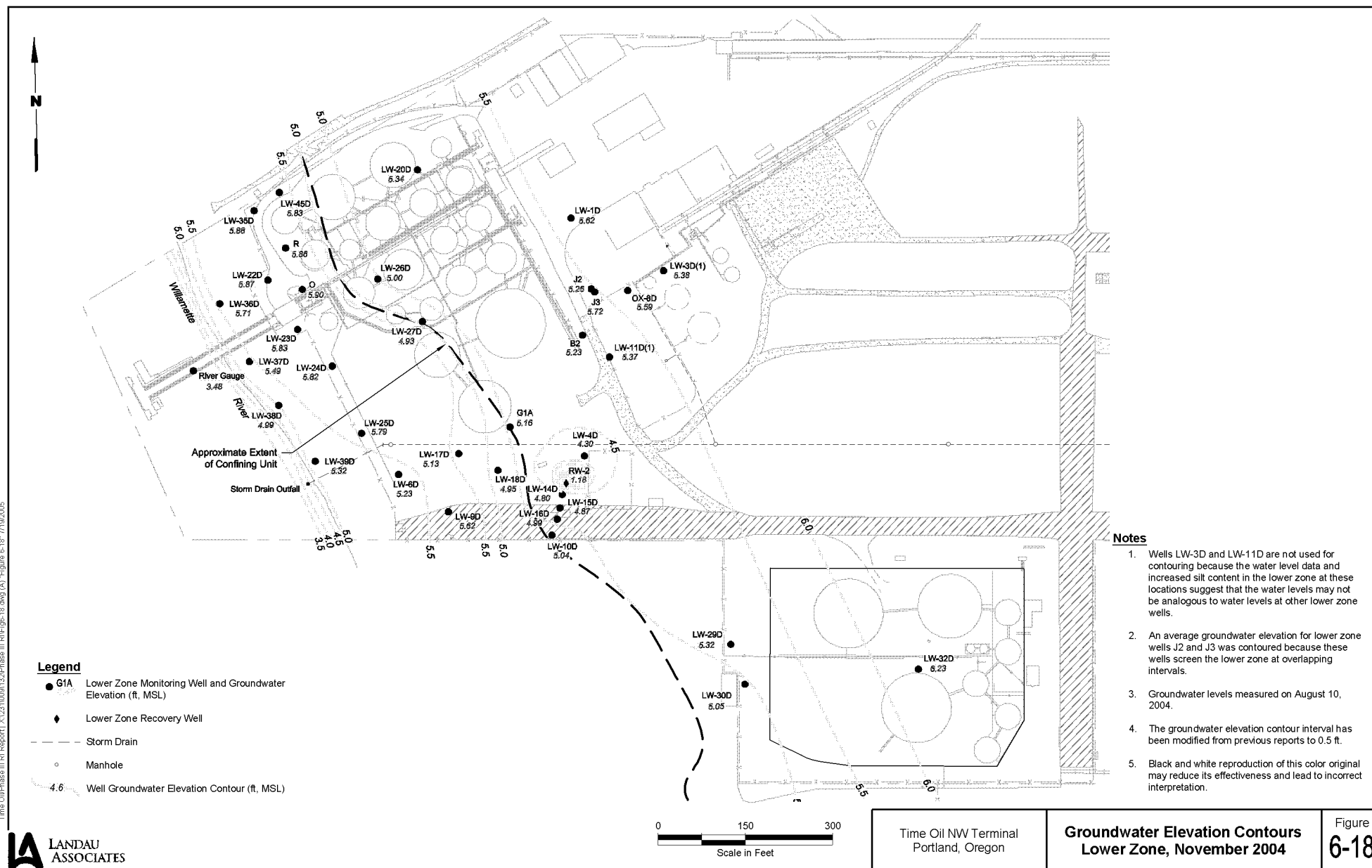


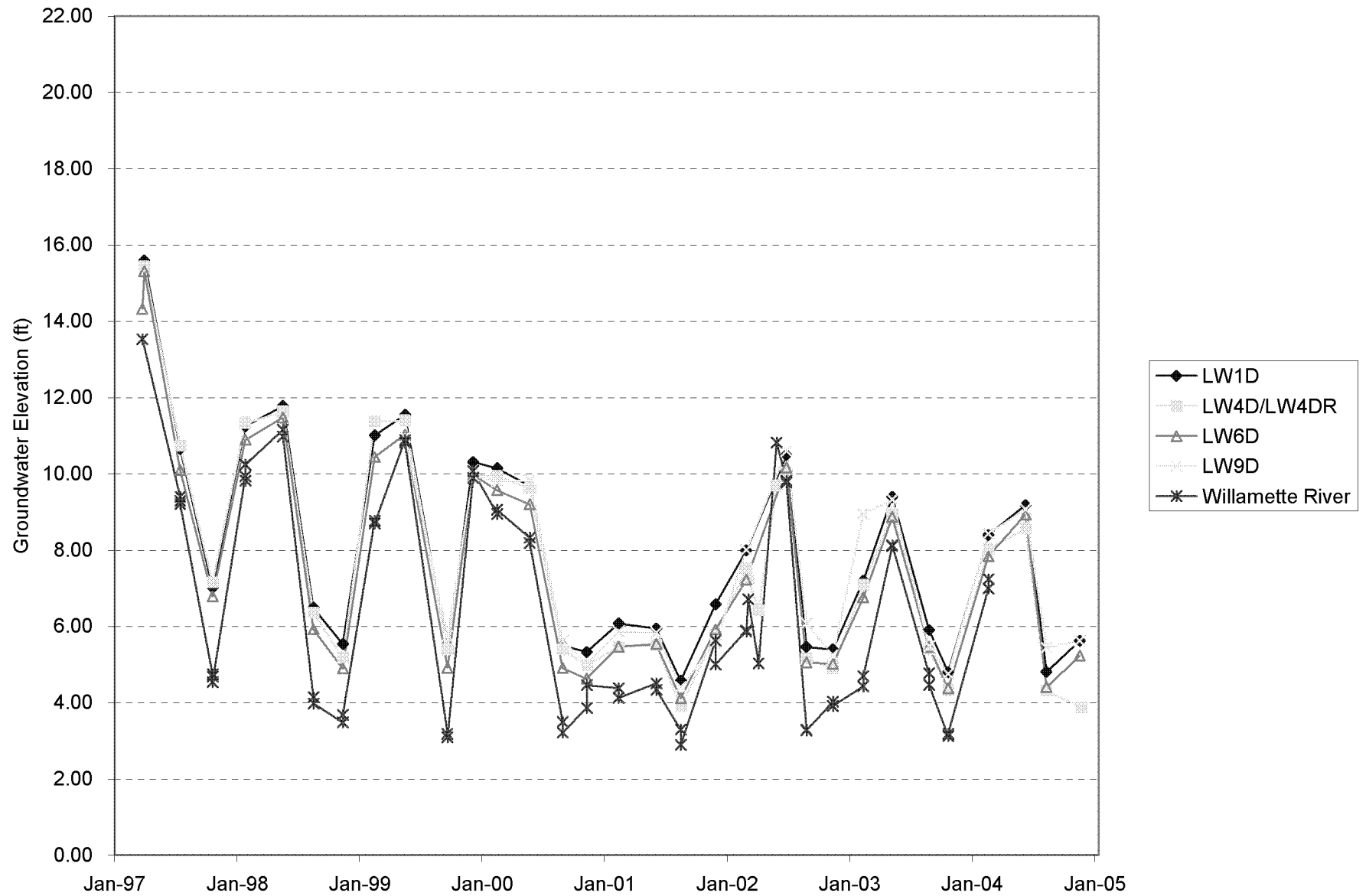
Time Oil Northwest Terminal
Portland, Oregon

Seasonal Trends
Upper Zone and River
March 1997 – November 2004

Figure
6-16



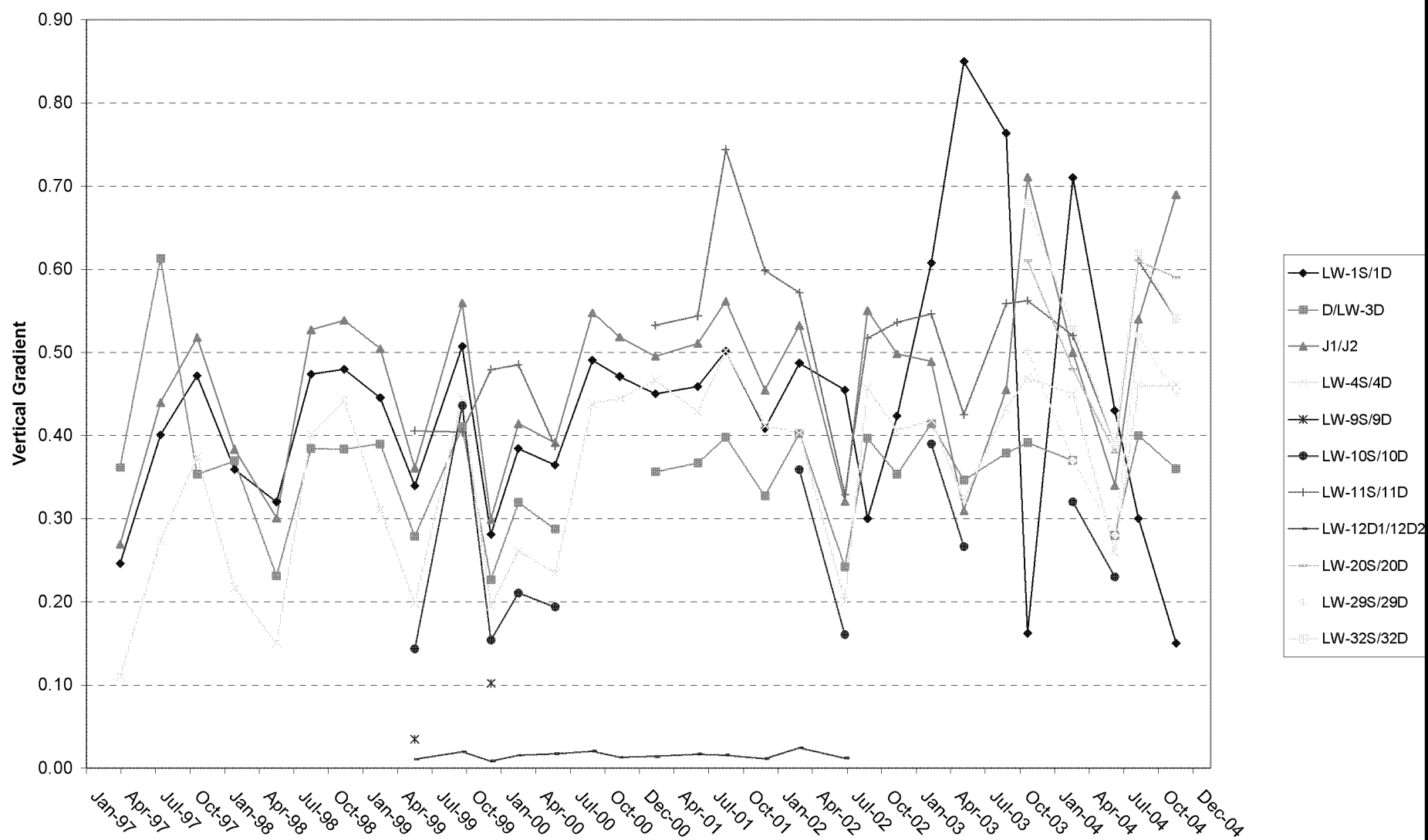




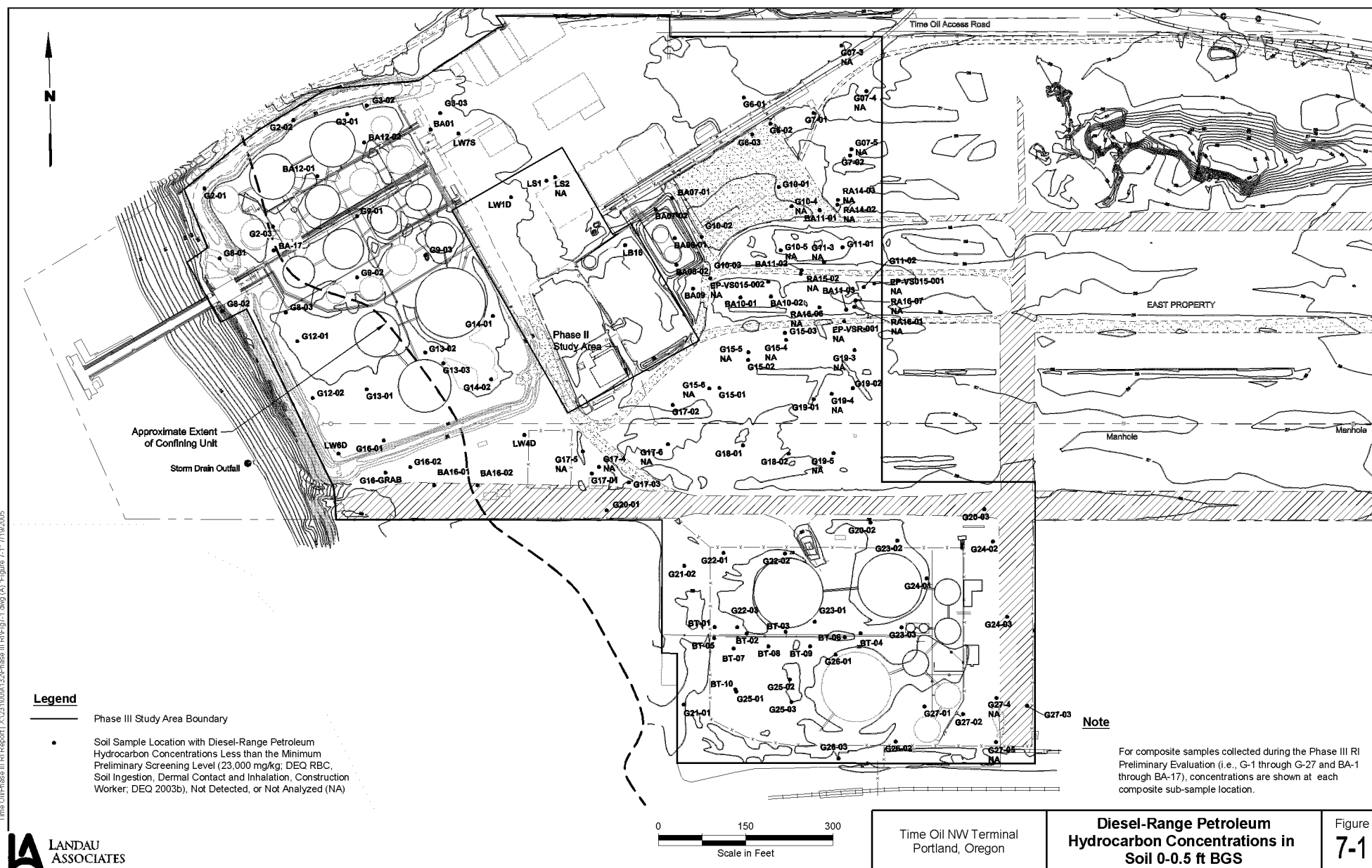
Time Oil Northwest Terminal
Portland, Oregon

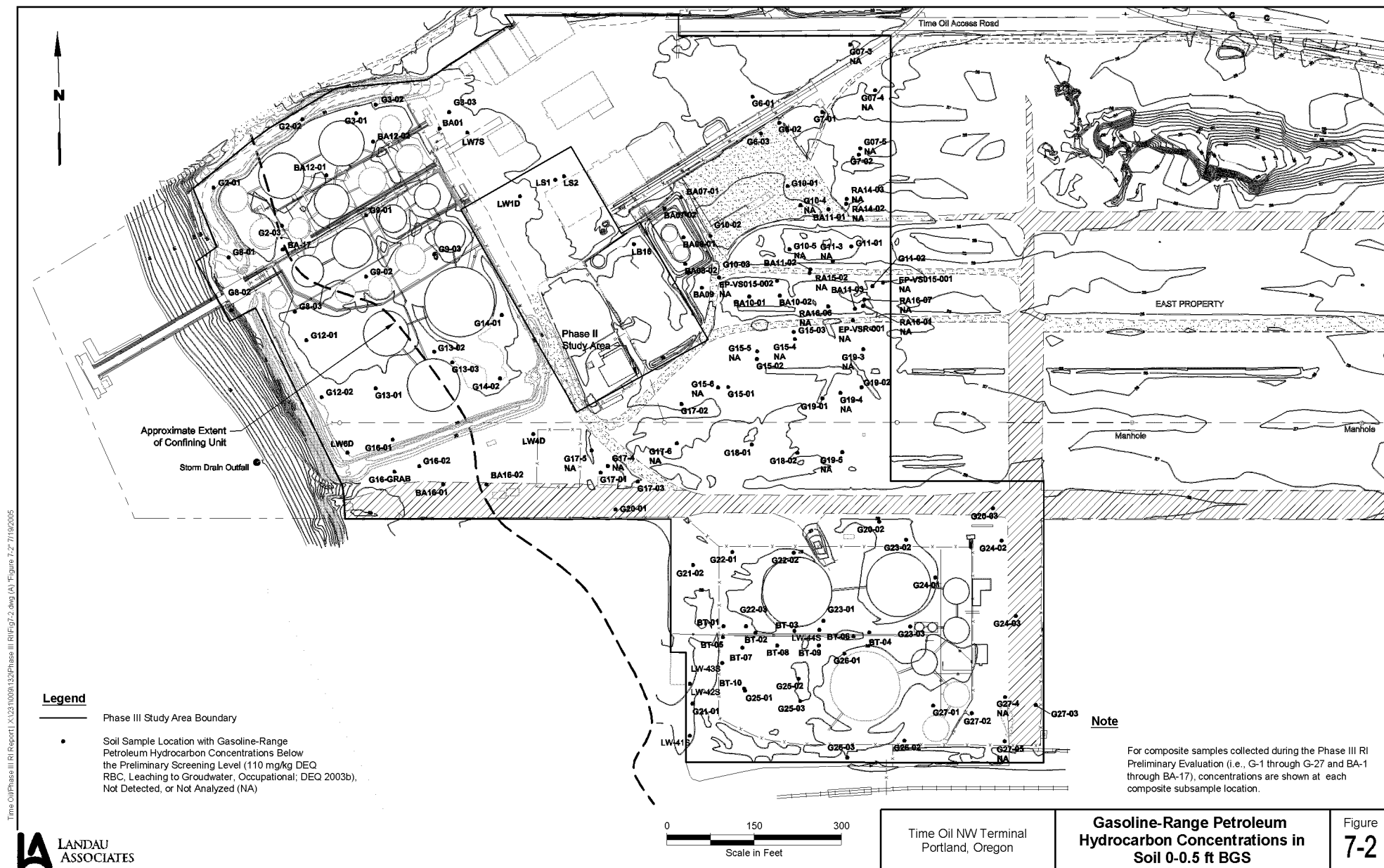
Seasonal Trends
Lower Zone and River
March 1997 – November 2004

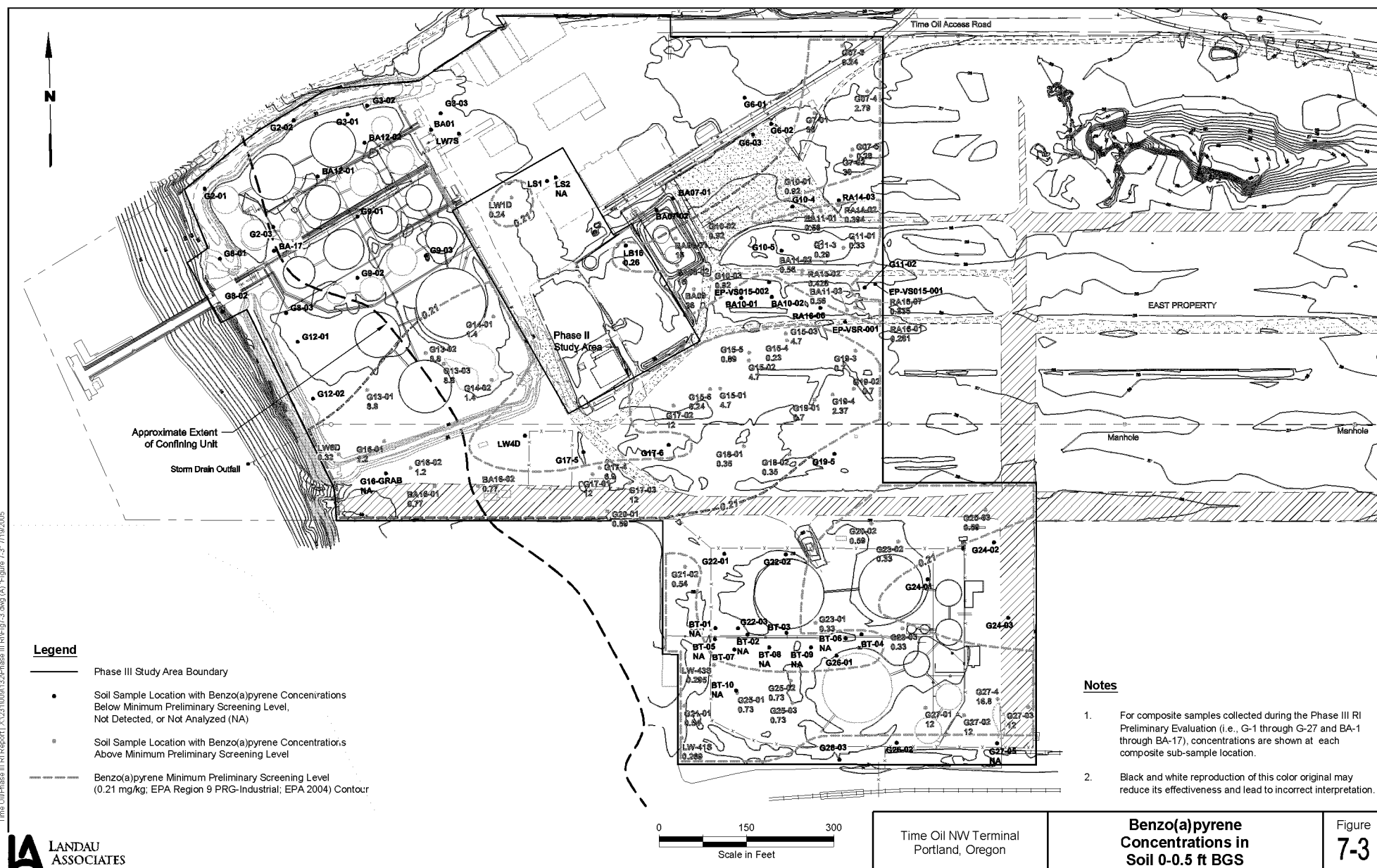
Figure
6-19

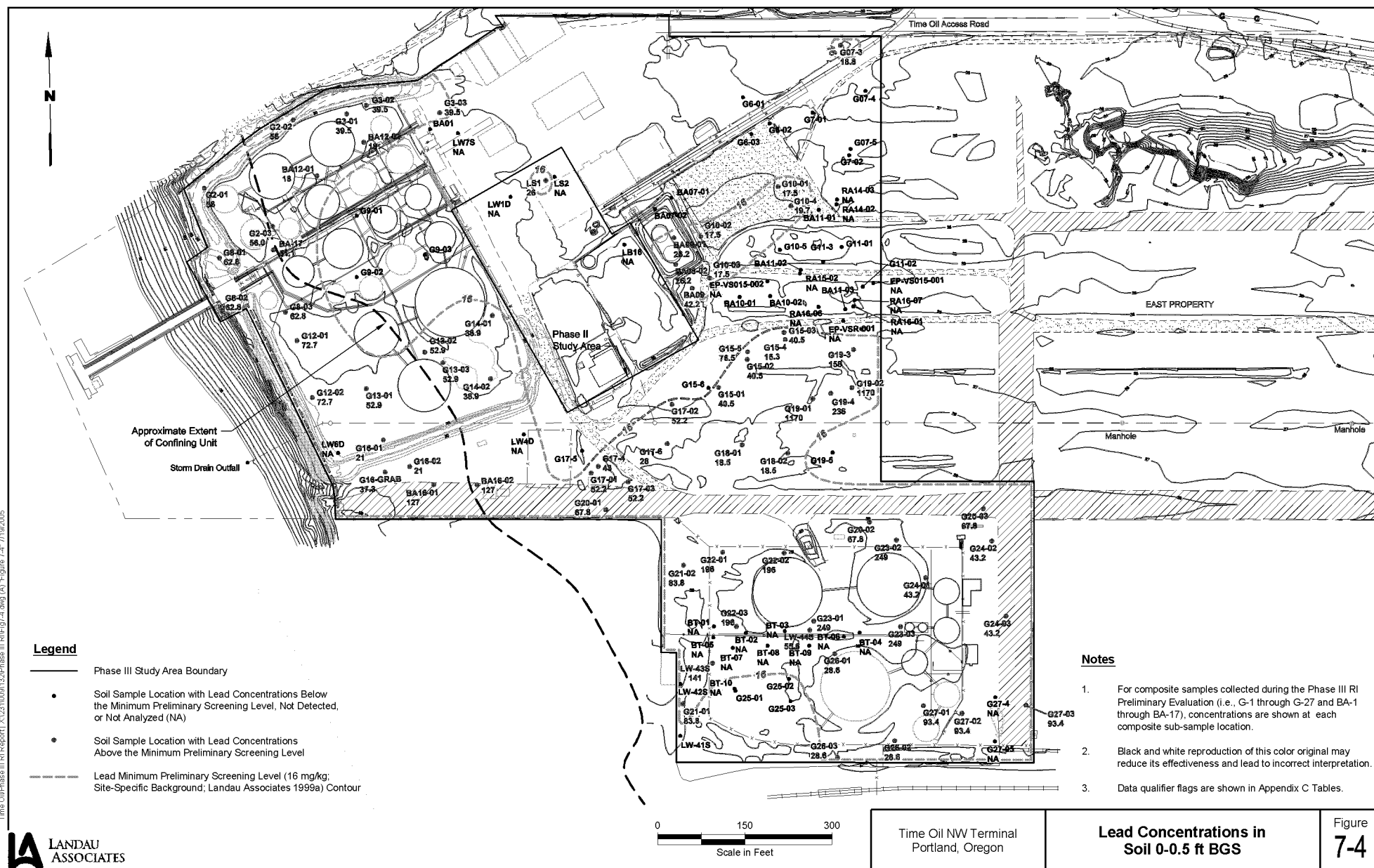


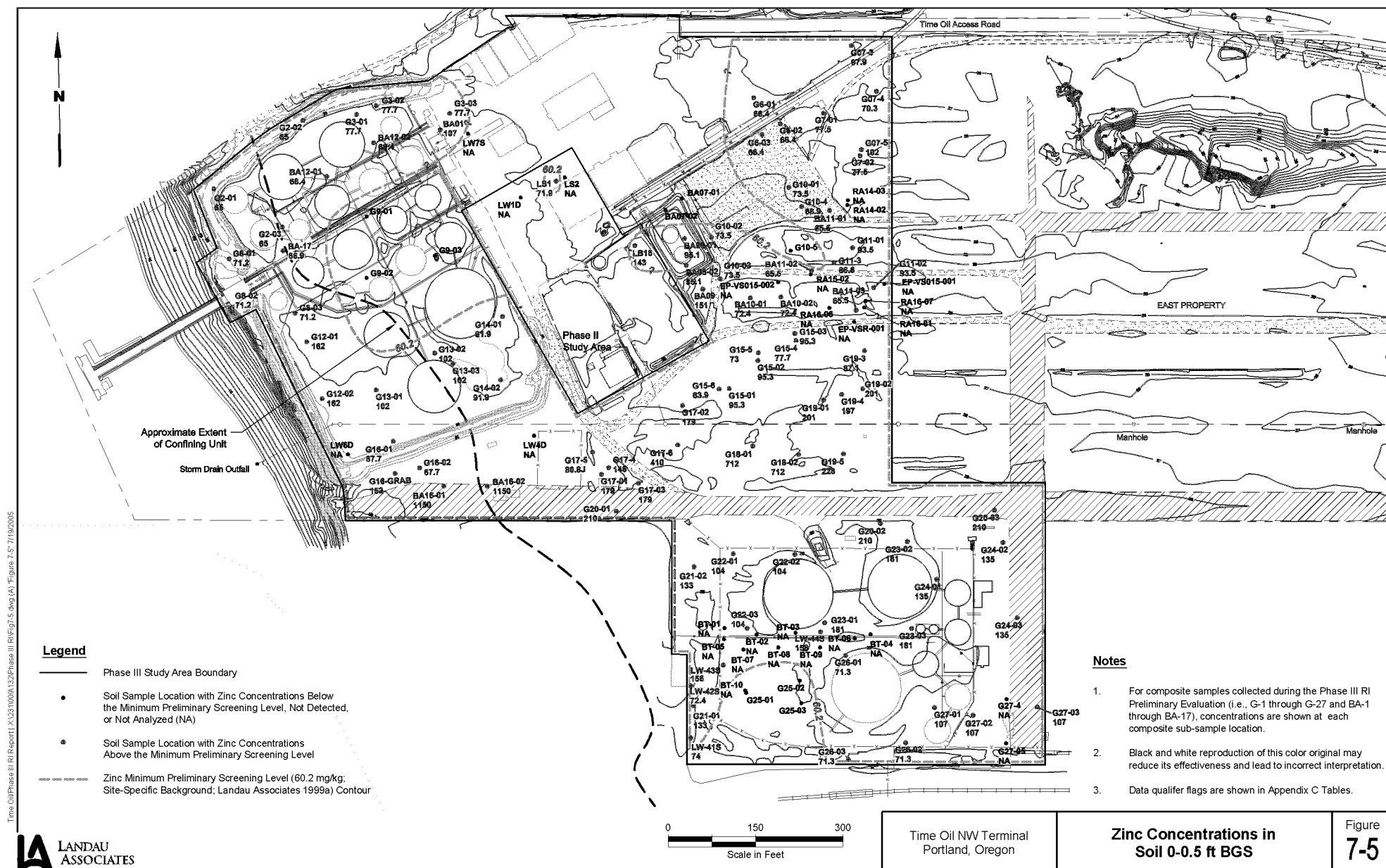
Time OilPhase III RI Report X:\310001\32Phase III RI\Fig7.1.dwg (A) Figure 7-1 7/19/2005

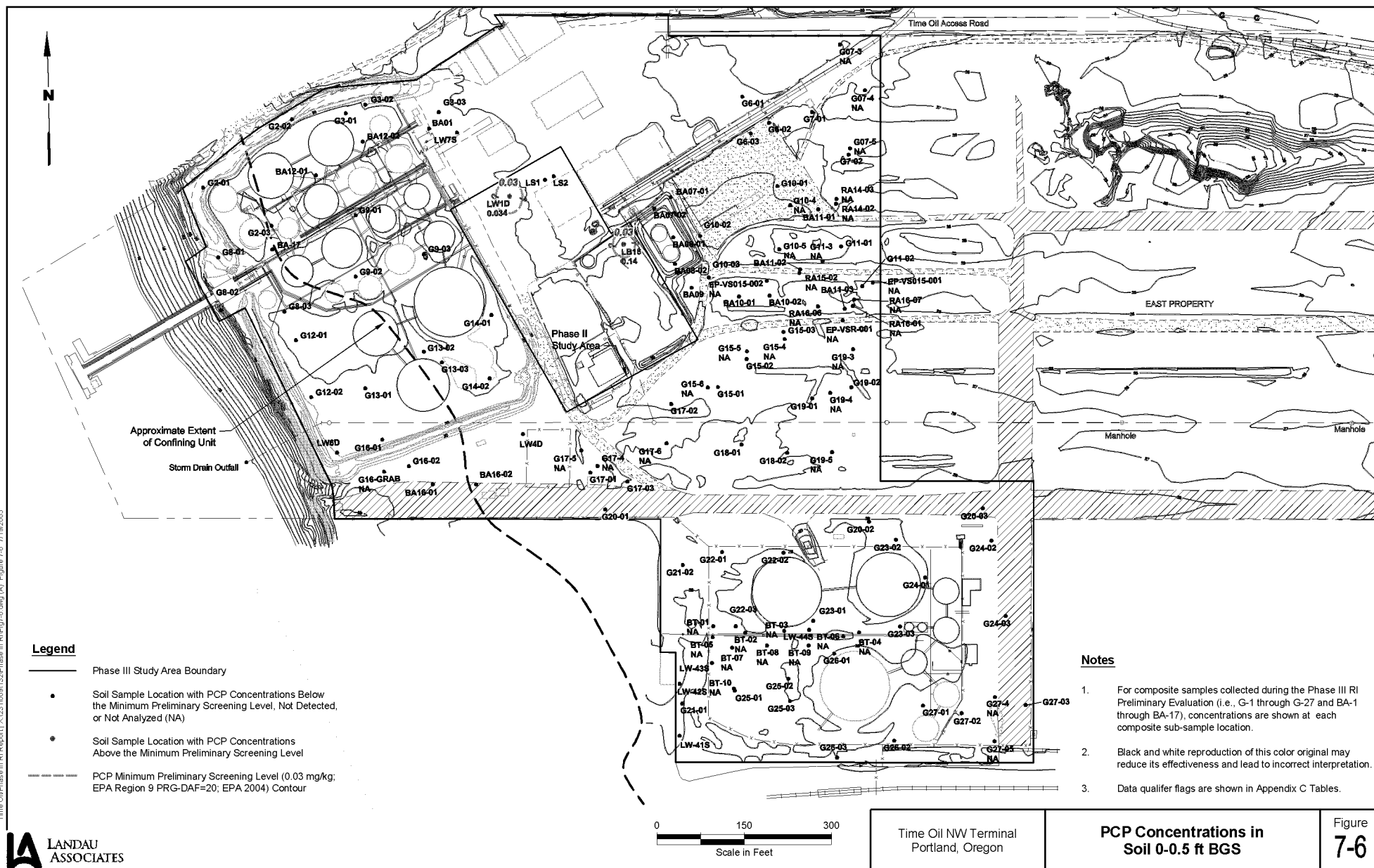


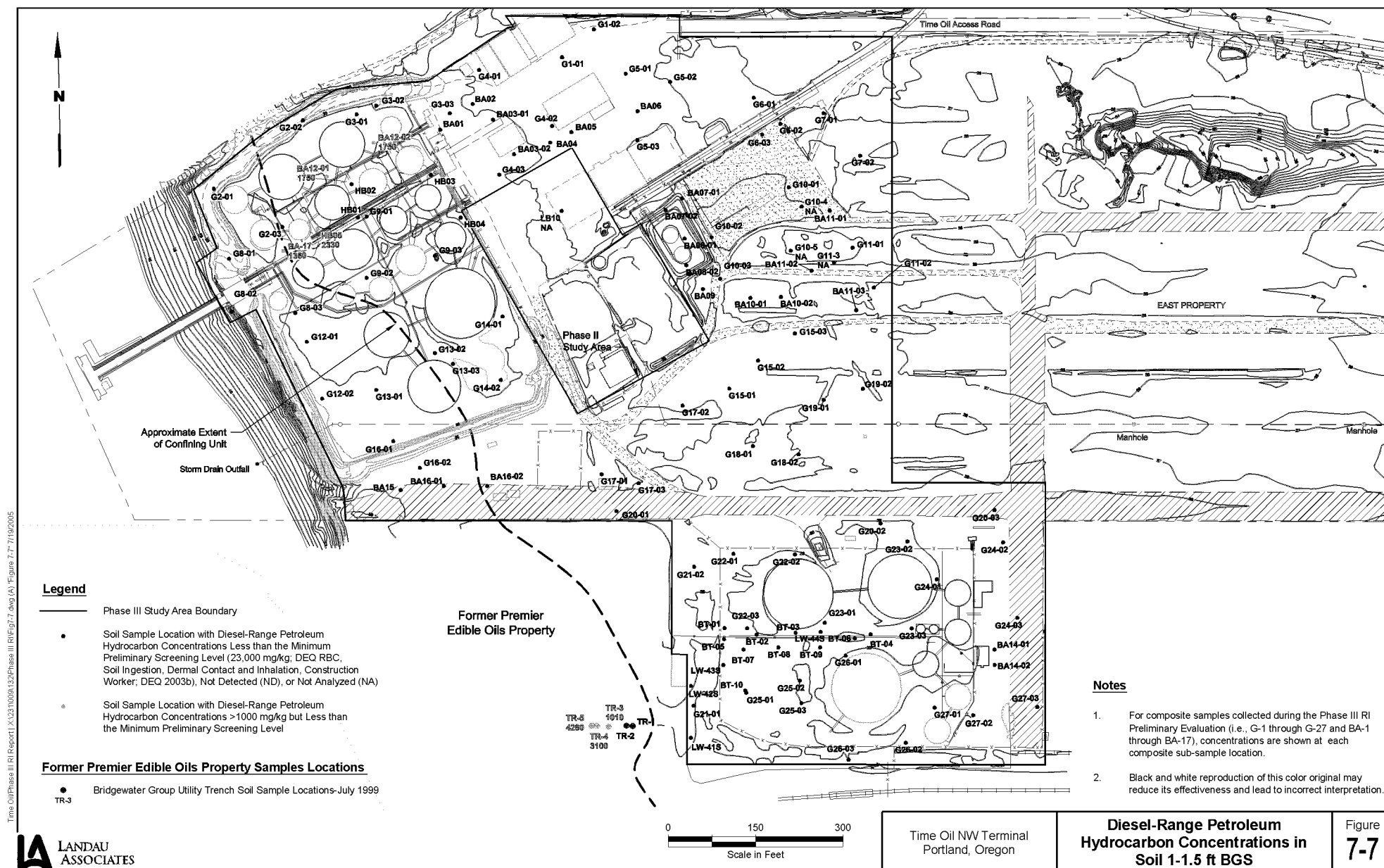


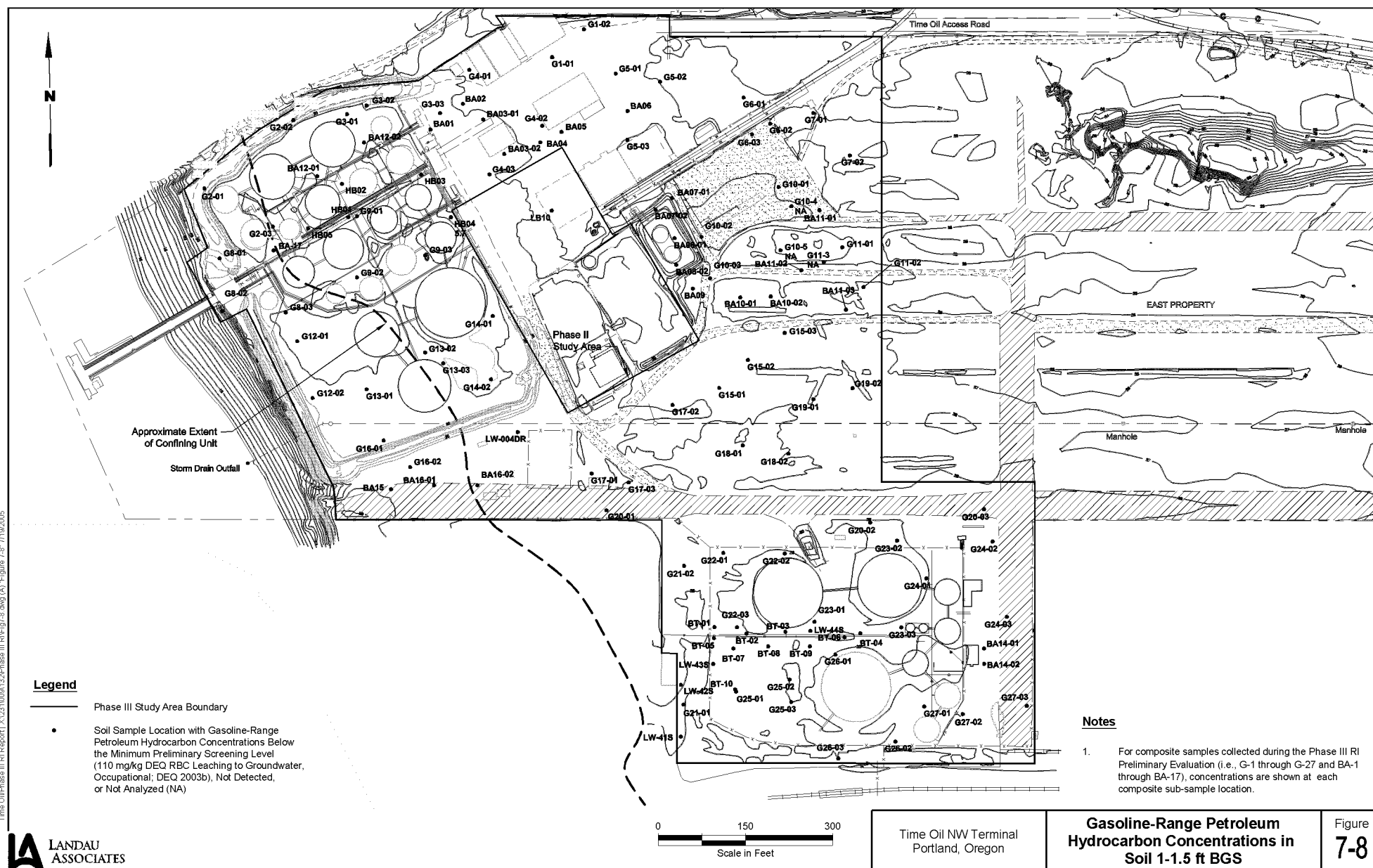


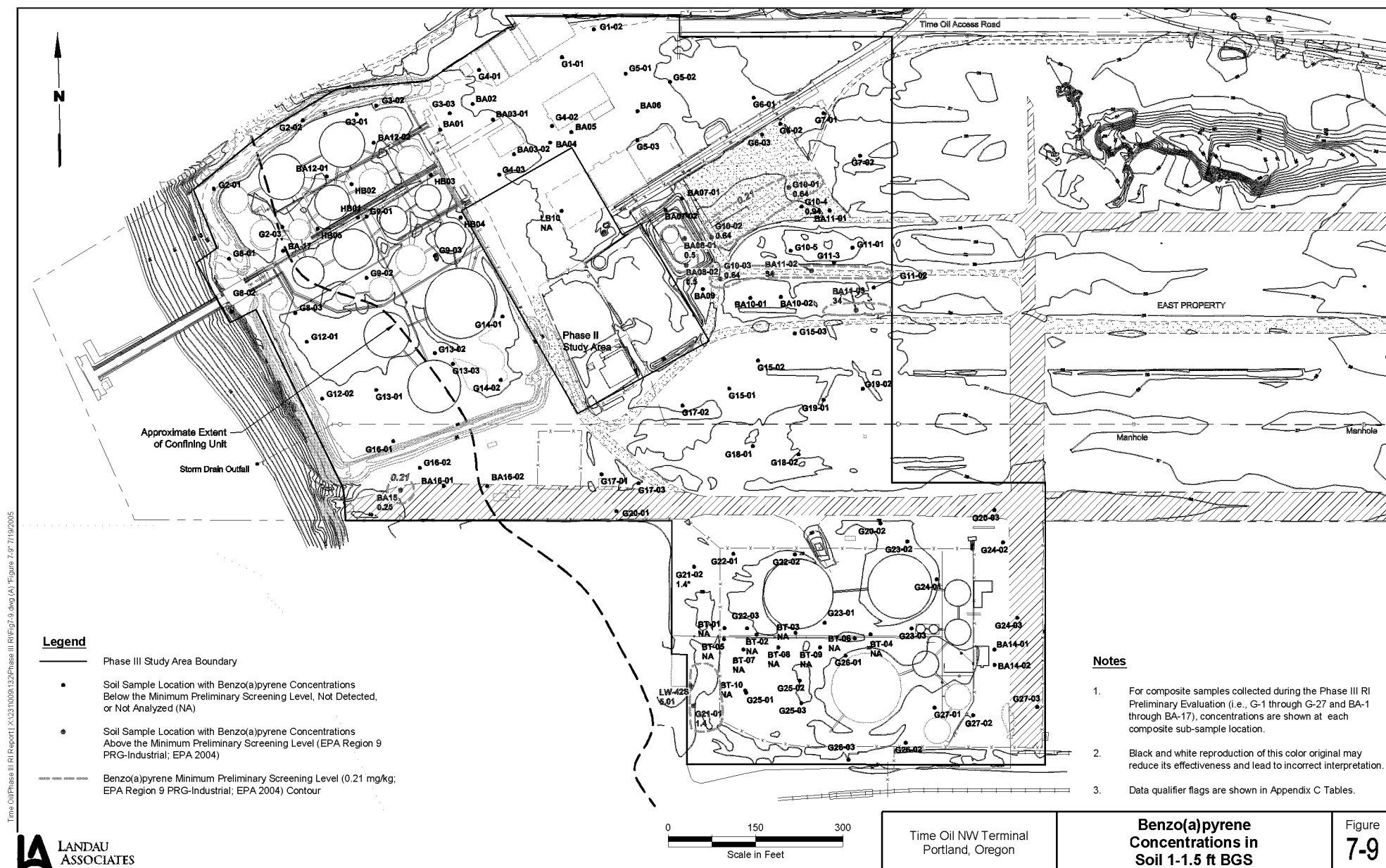


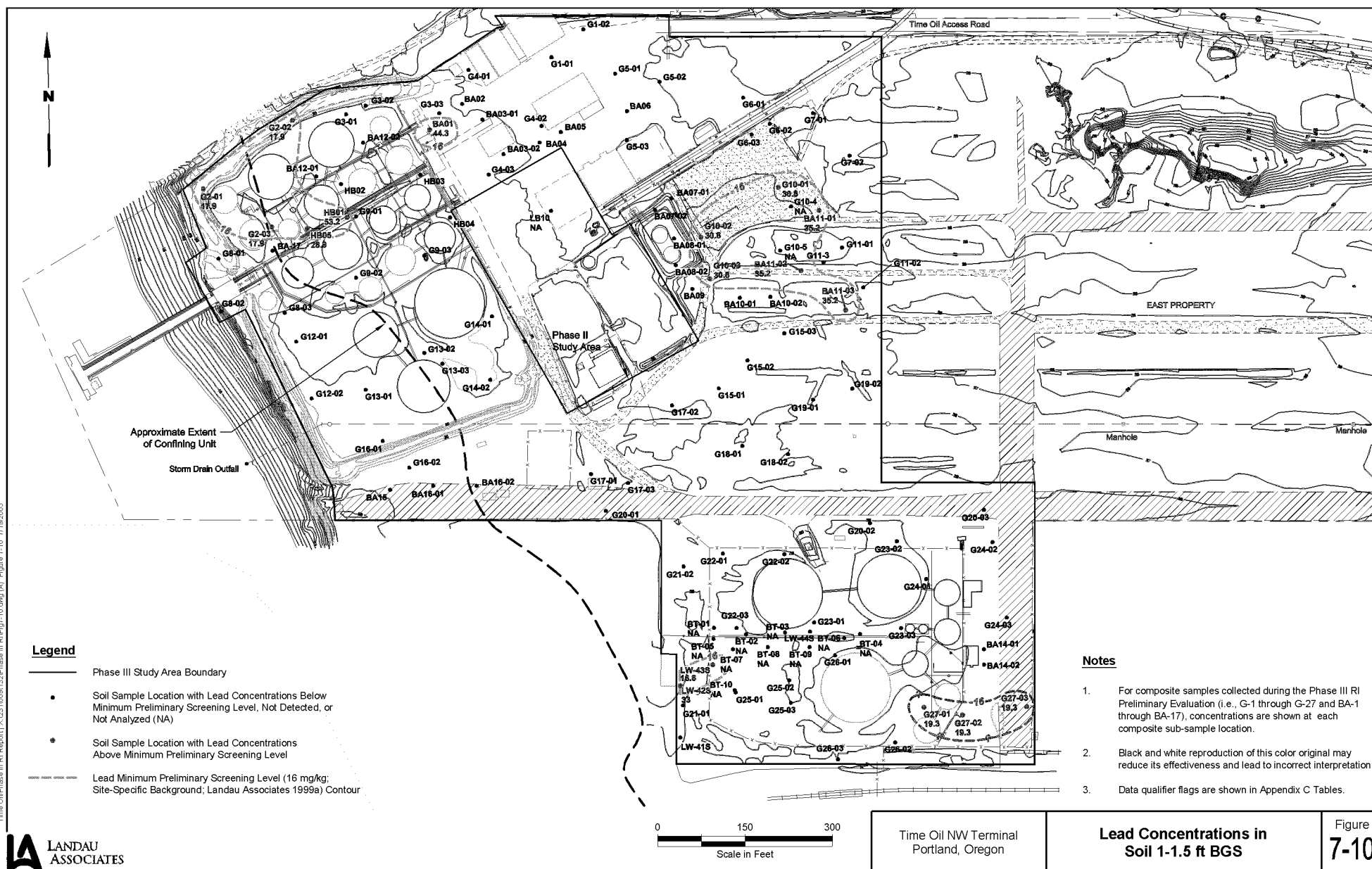


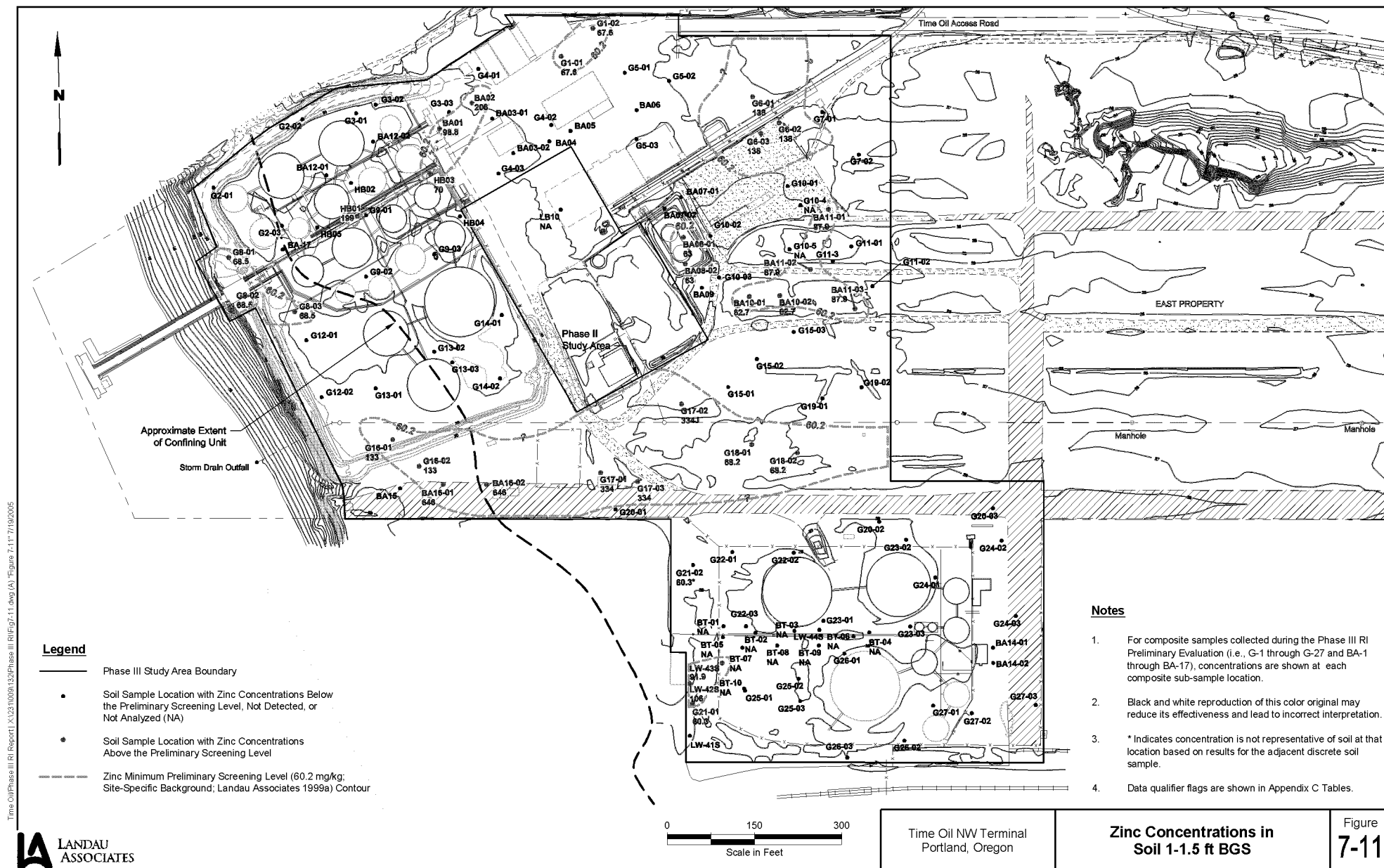


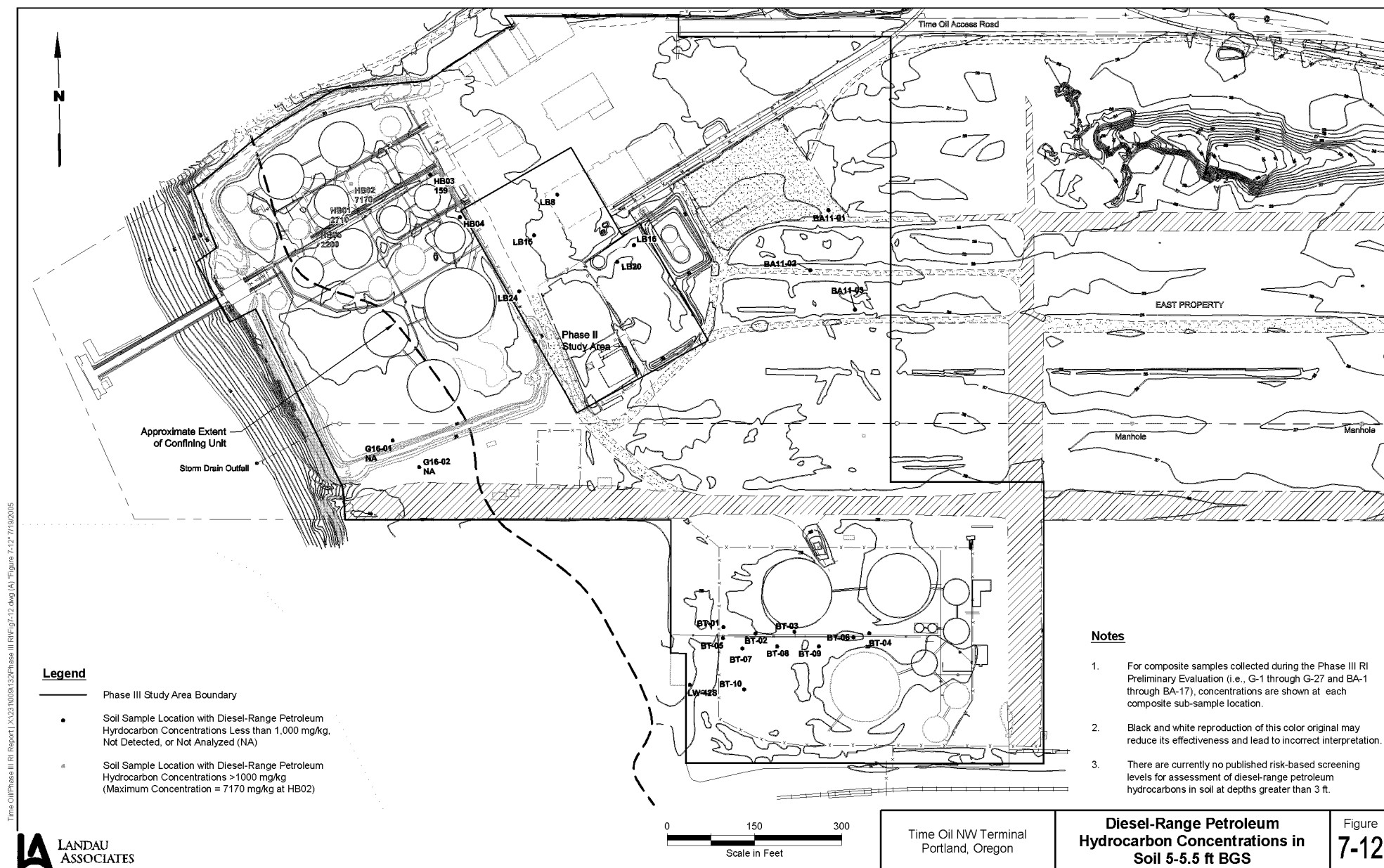


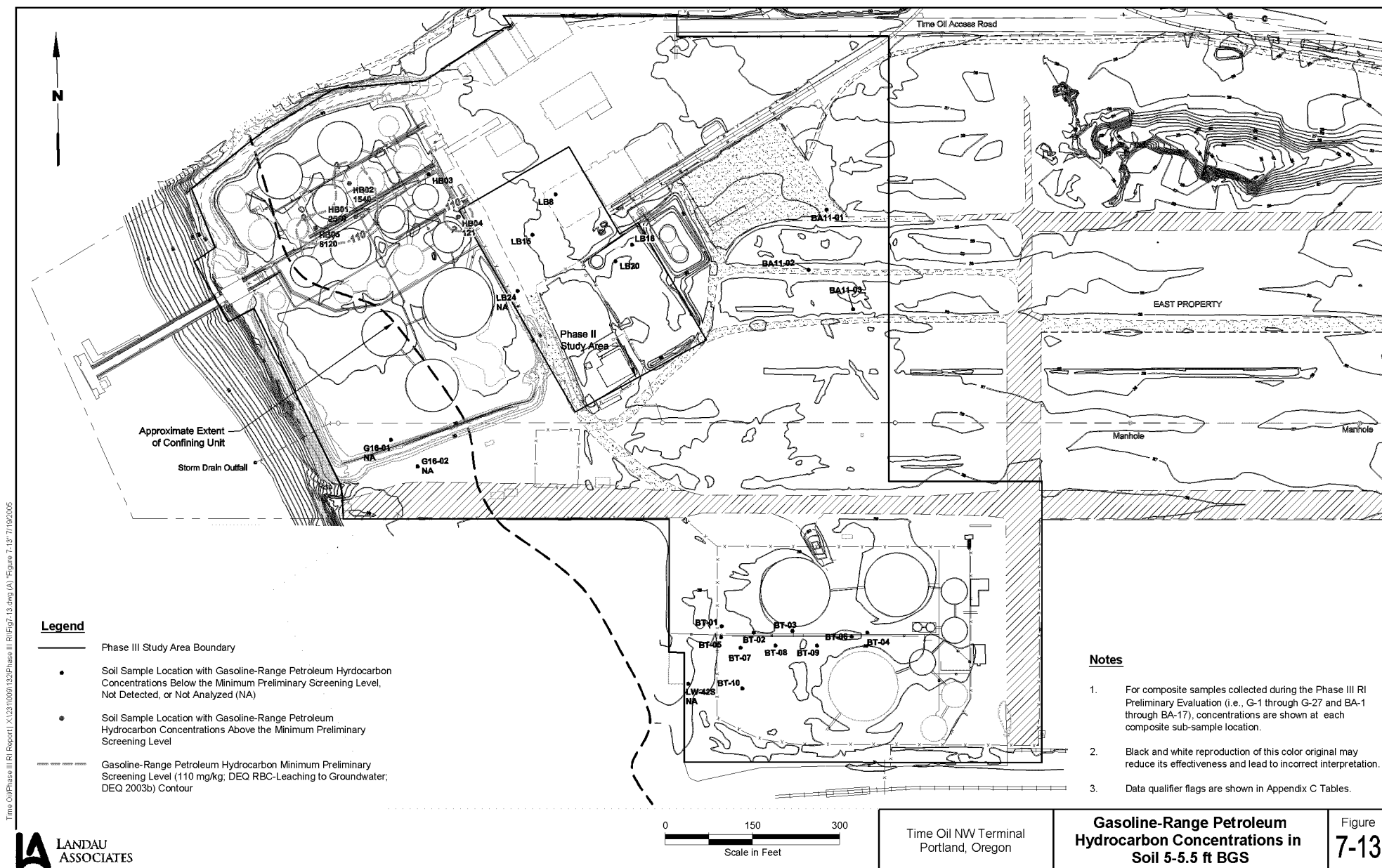


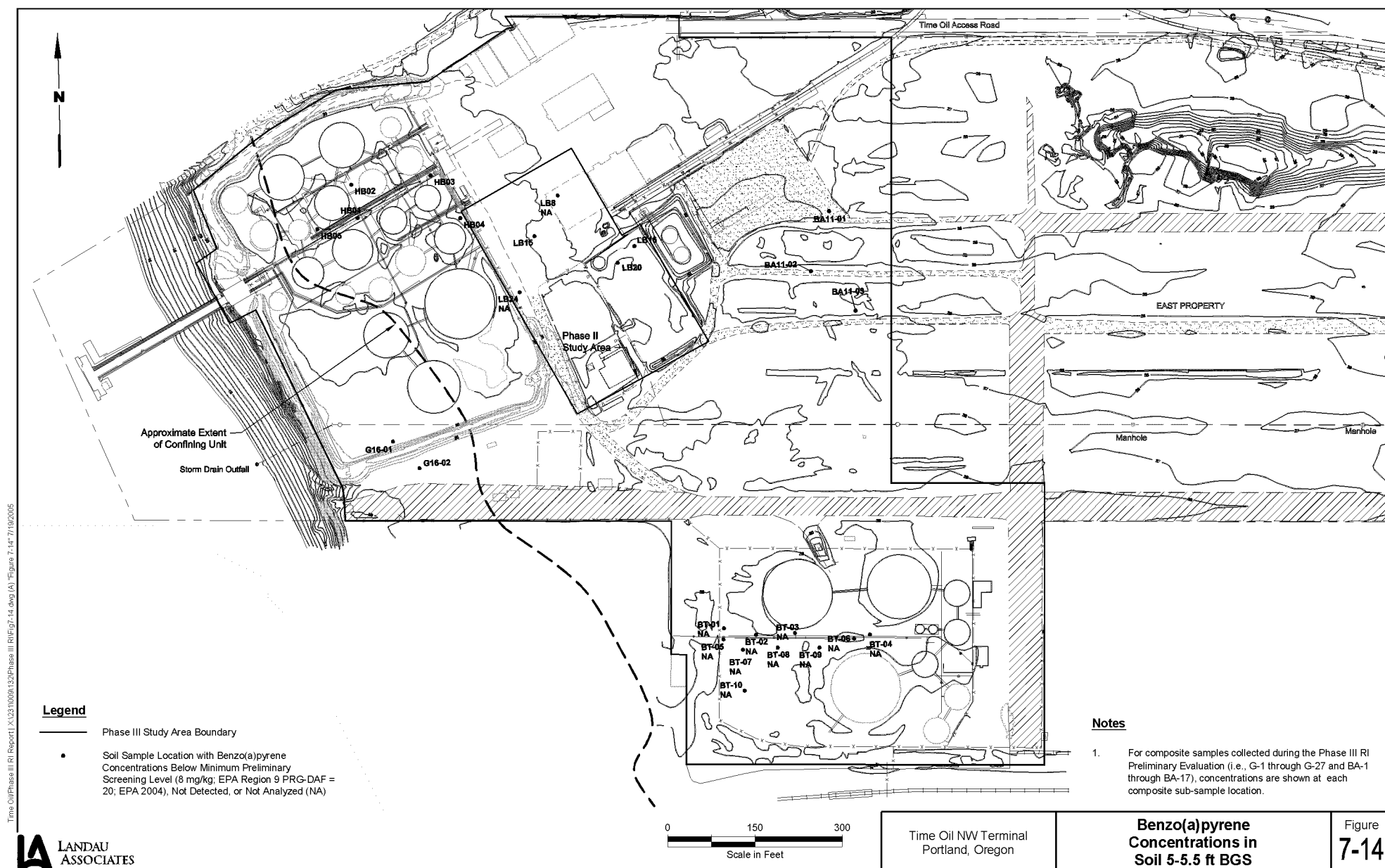




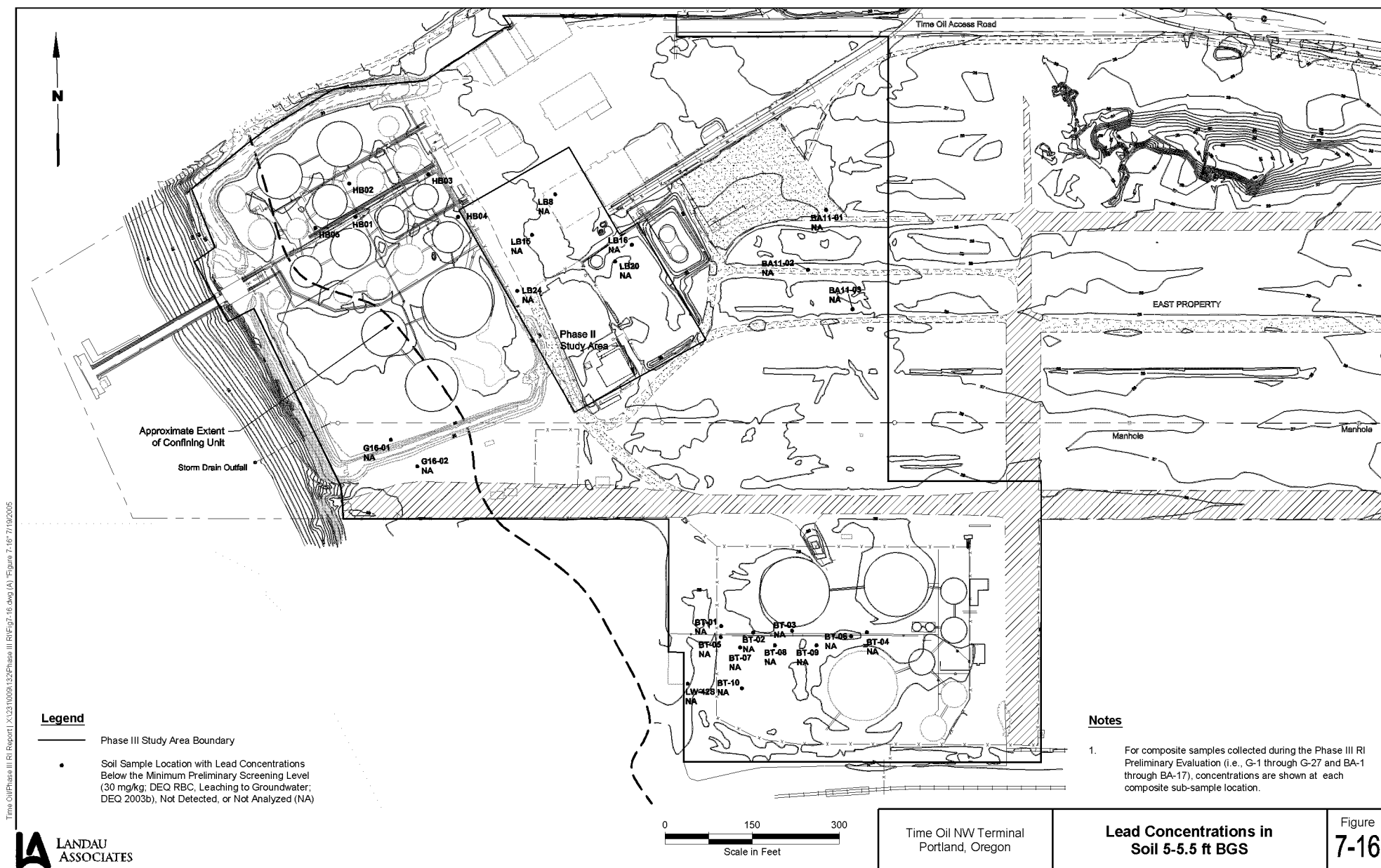


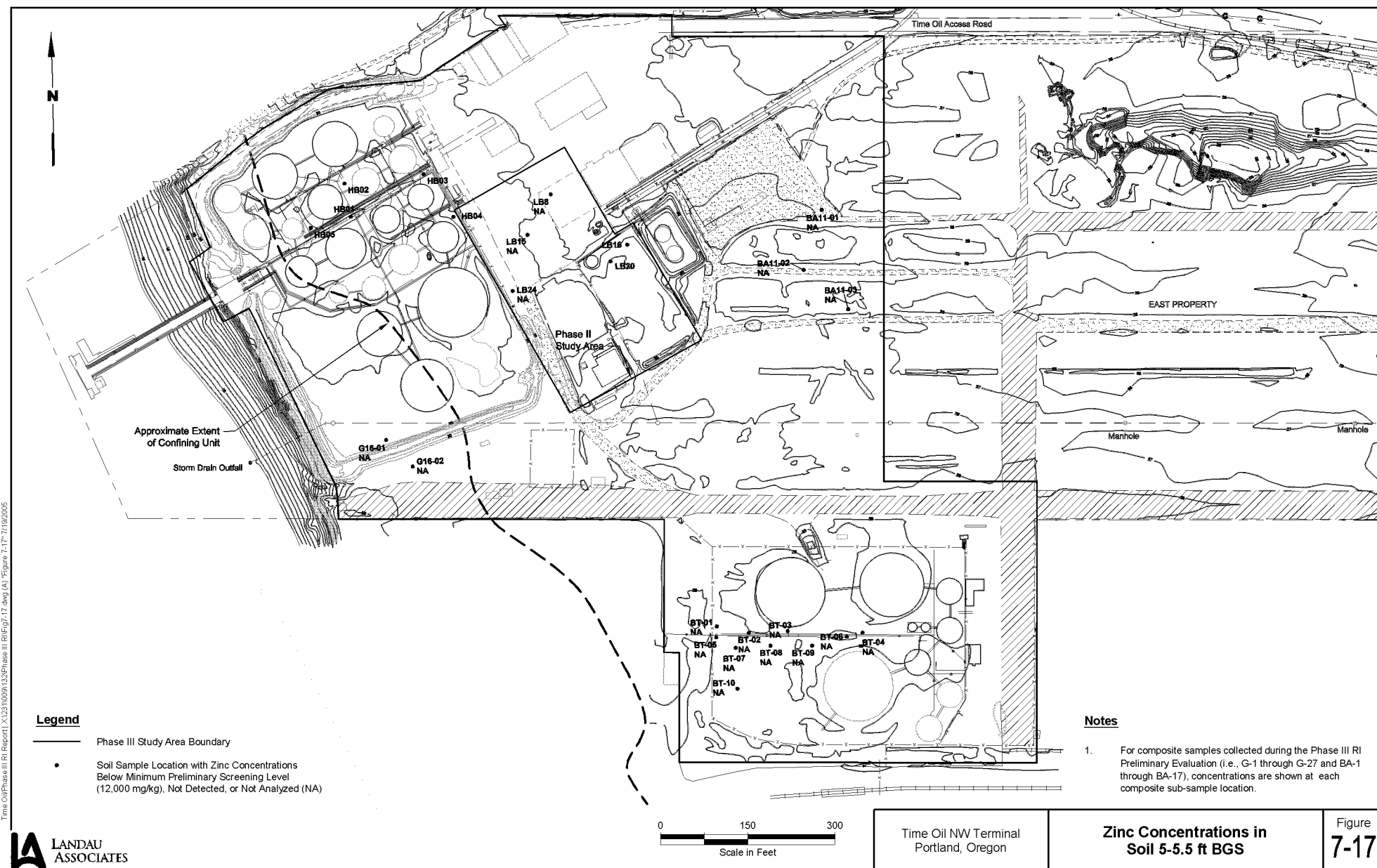


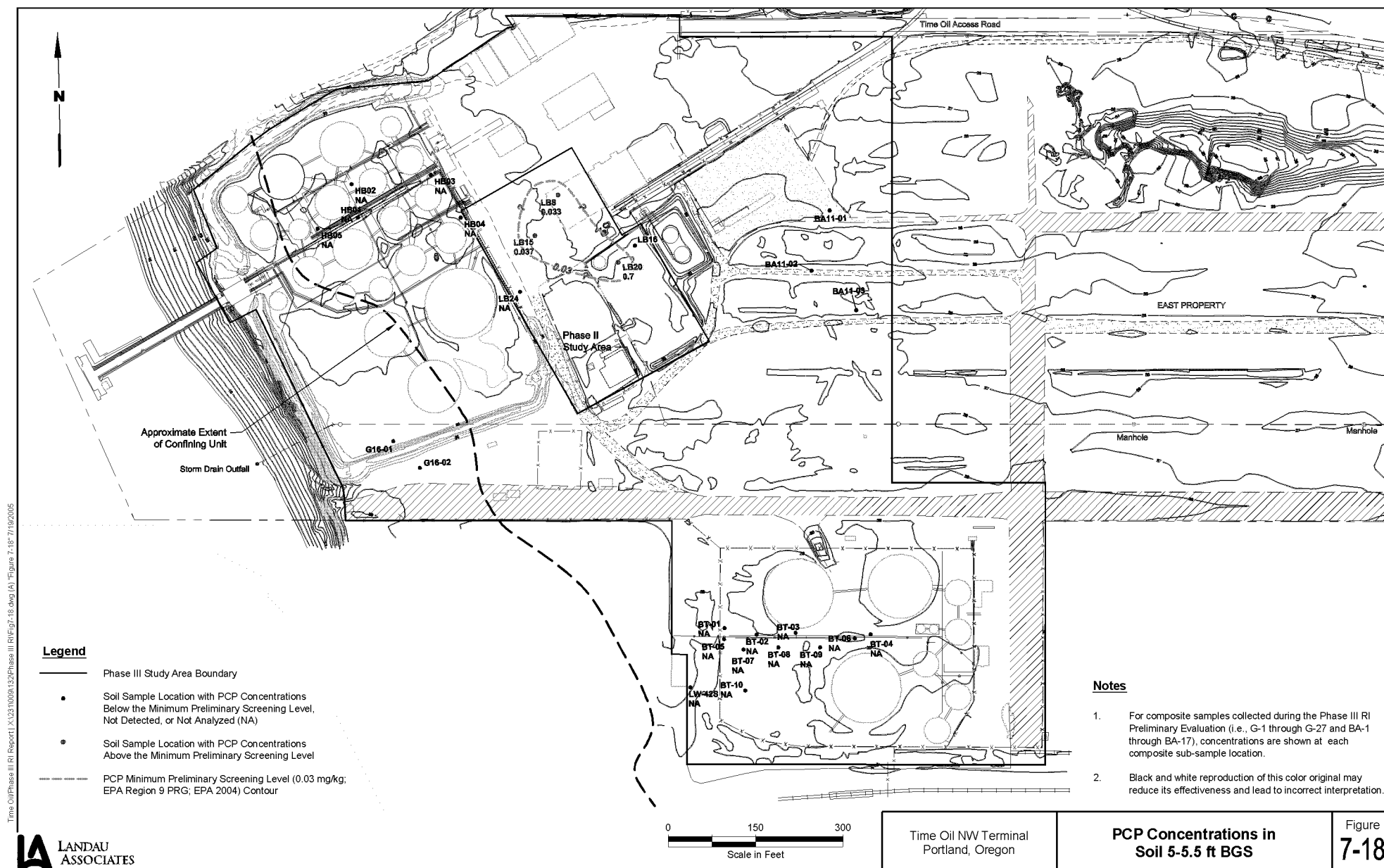


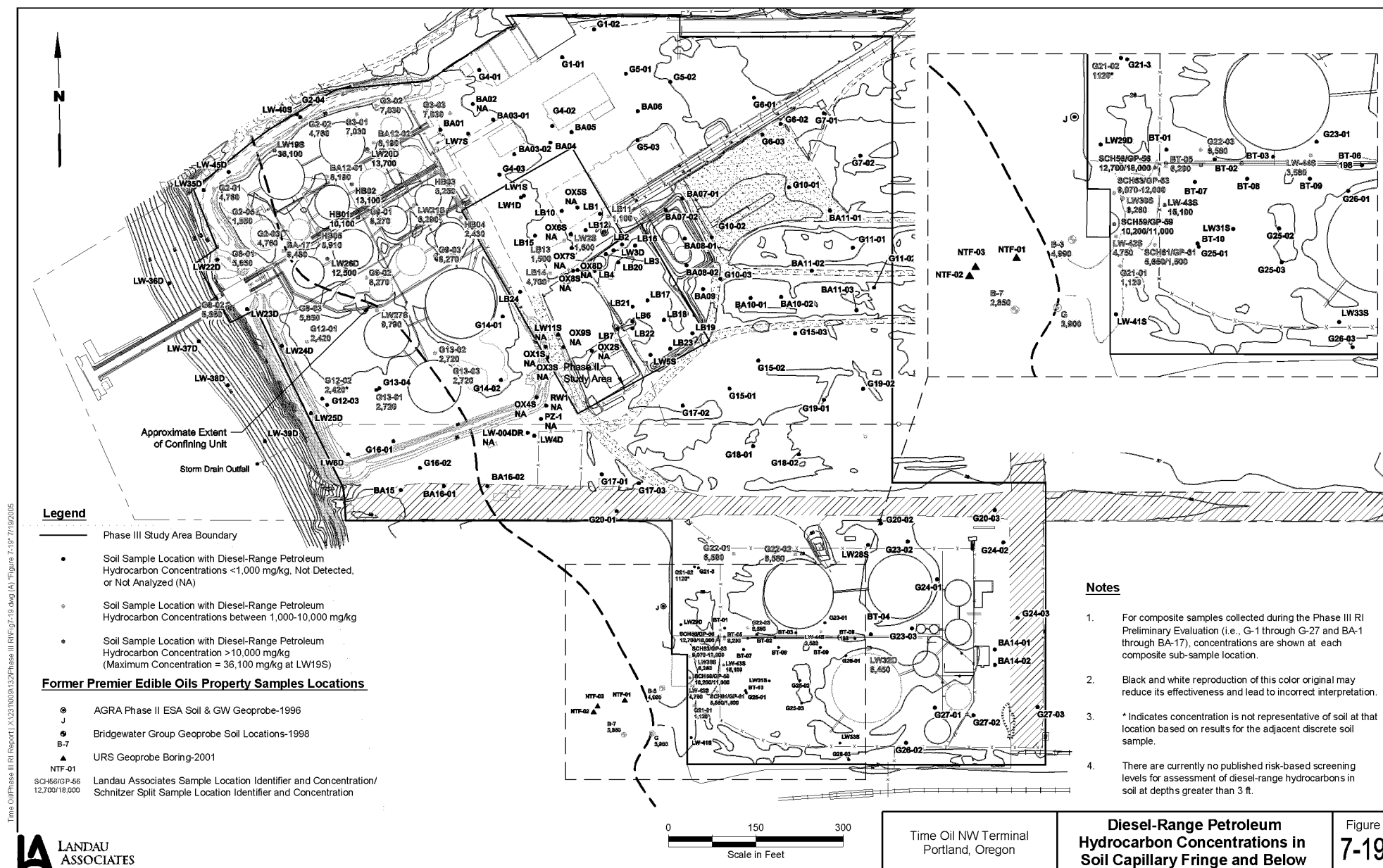


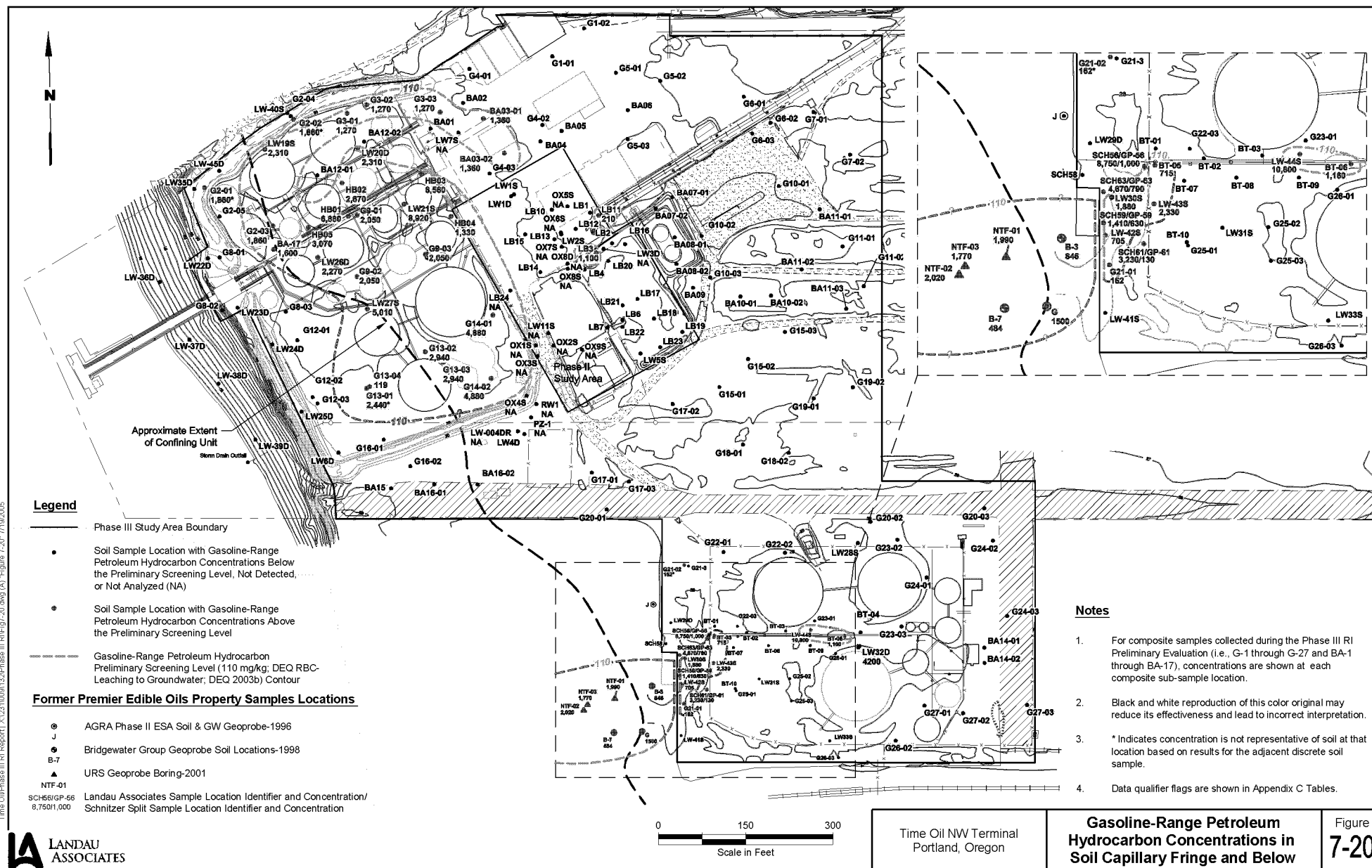




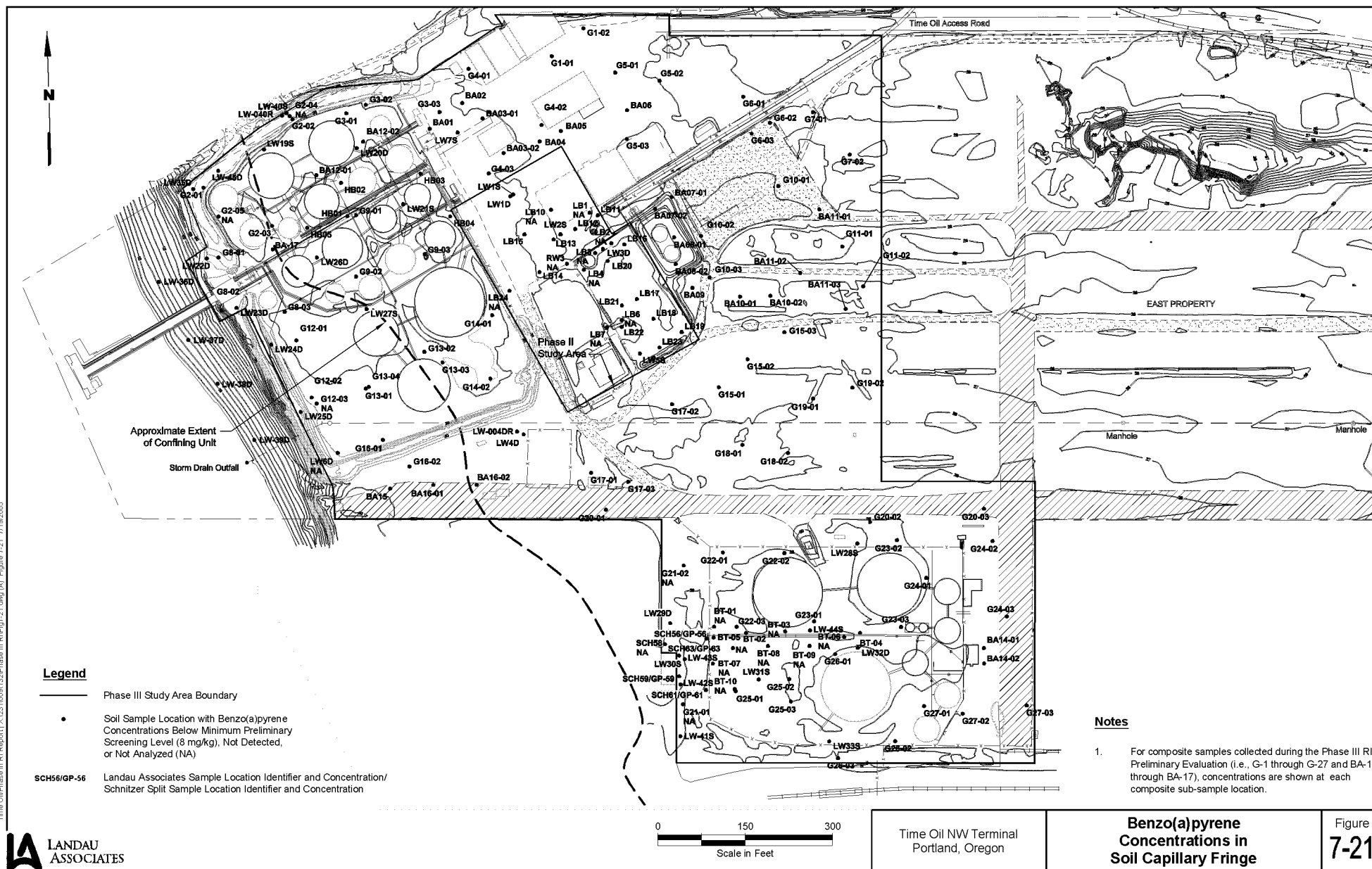


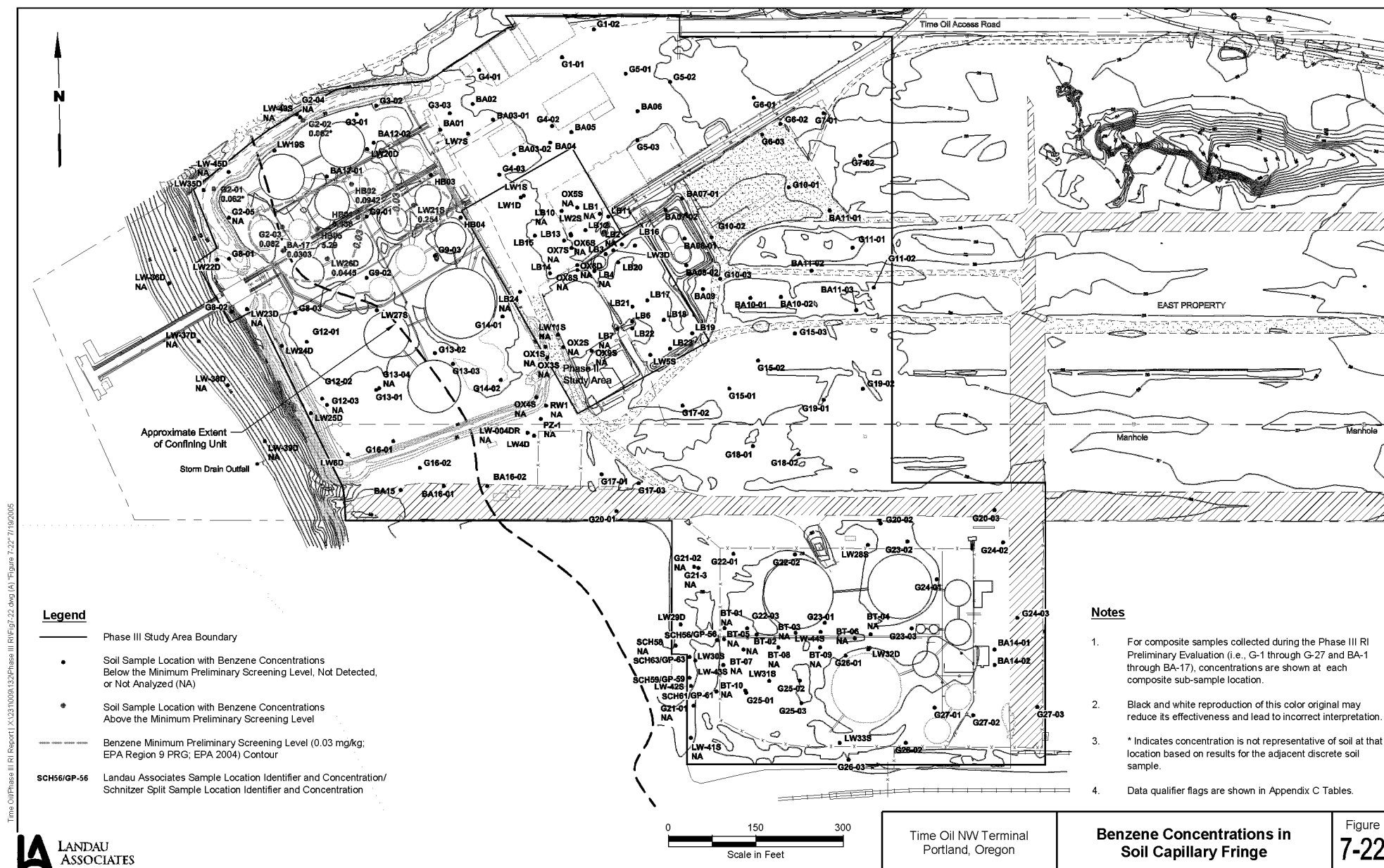


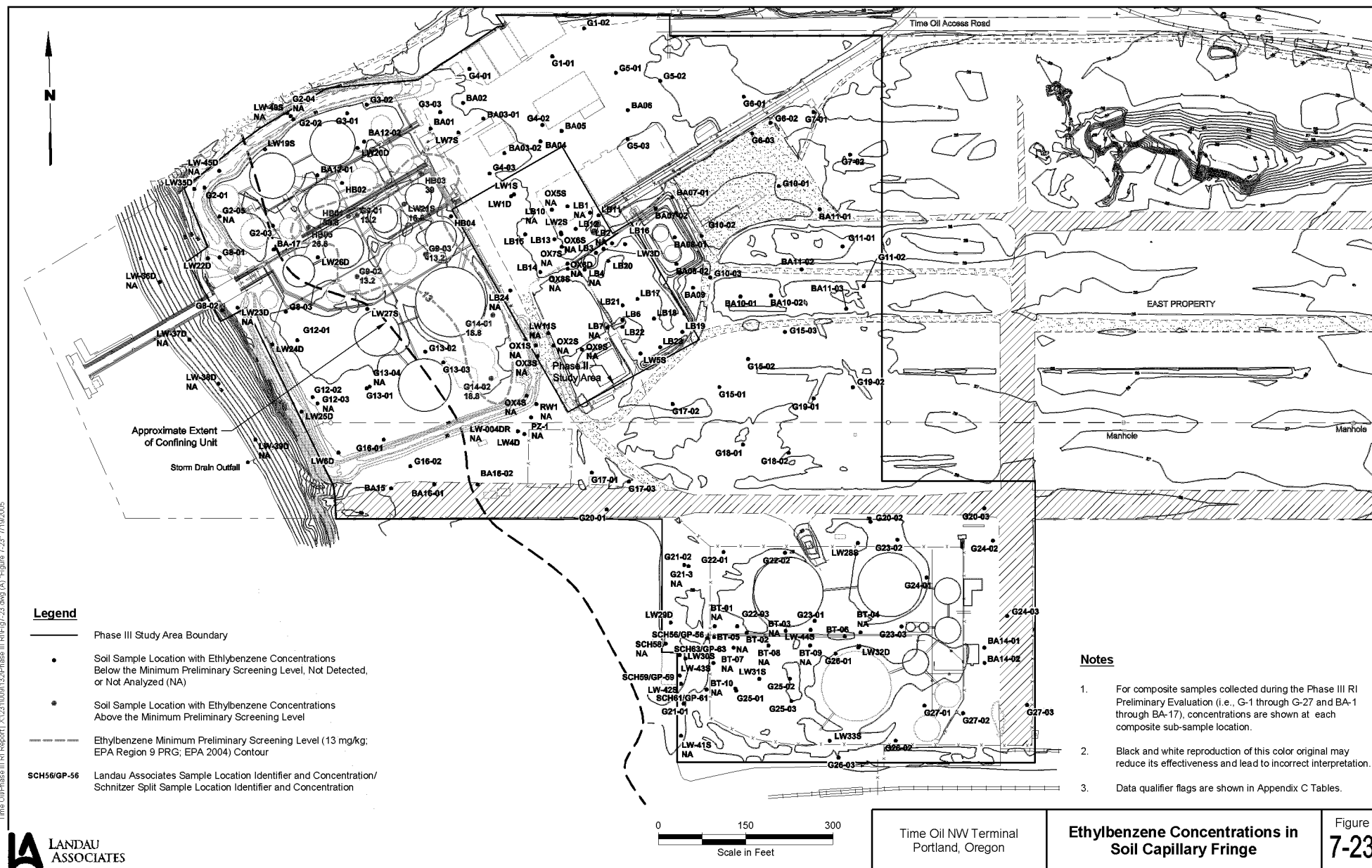


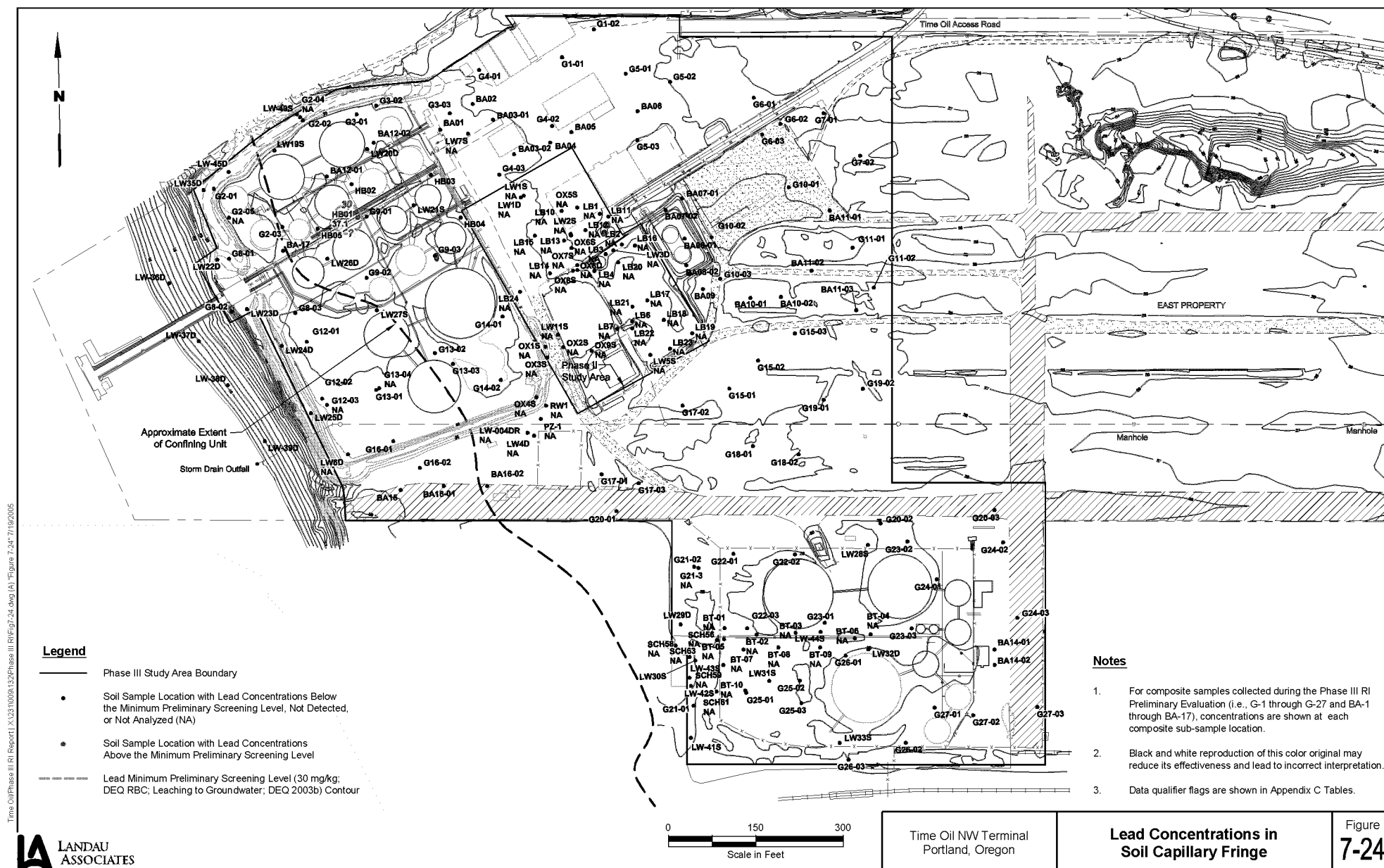


Time Oil Phase III RI Report (X:\2310004\132Phase III RI\Fig\2-21.dwg) (A) Figure 2-21 7/19/2005

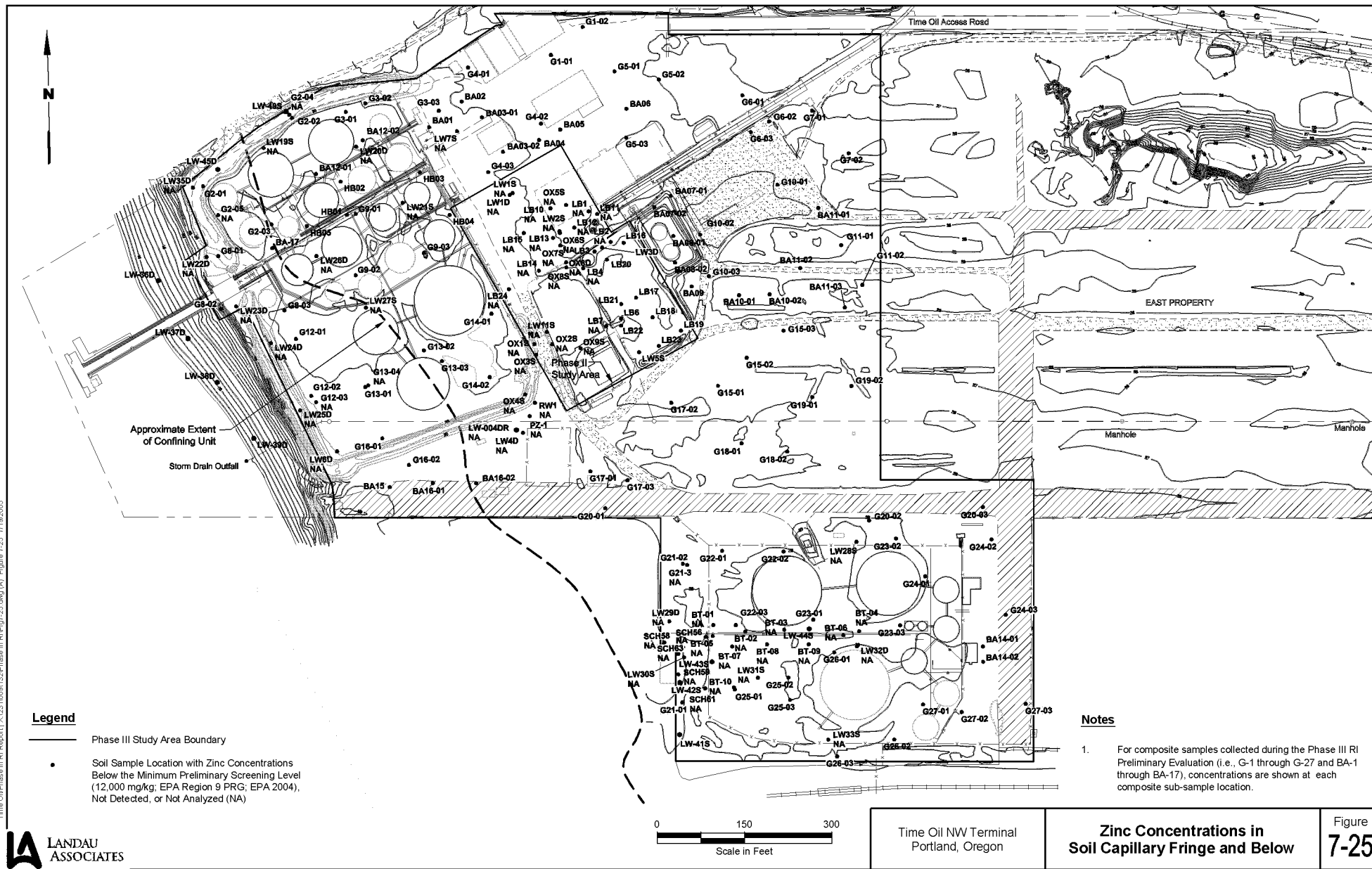


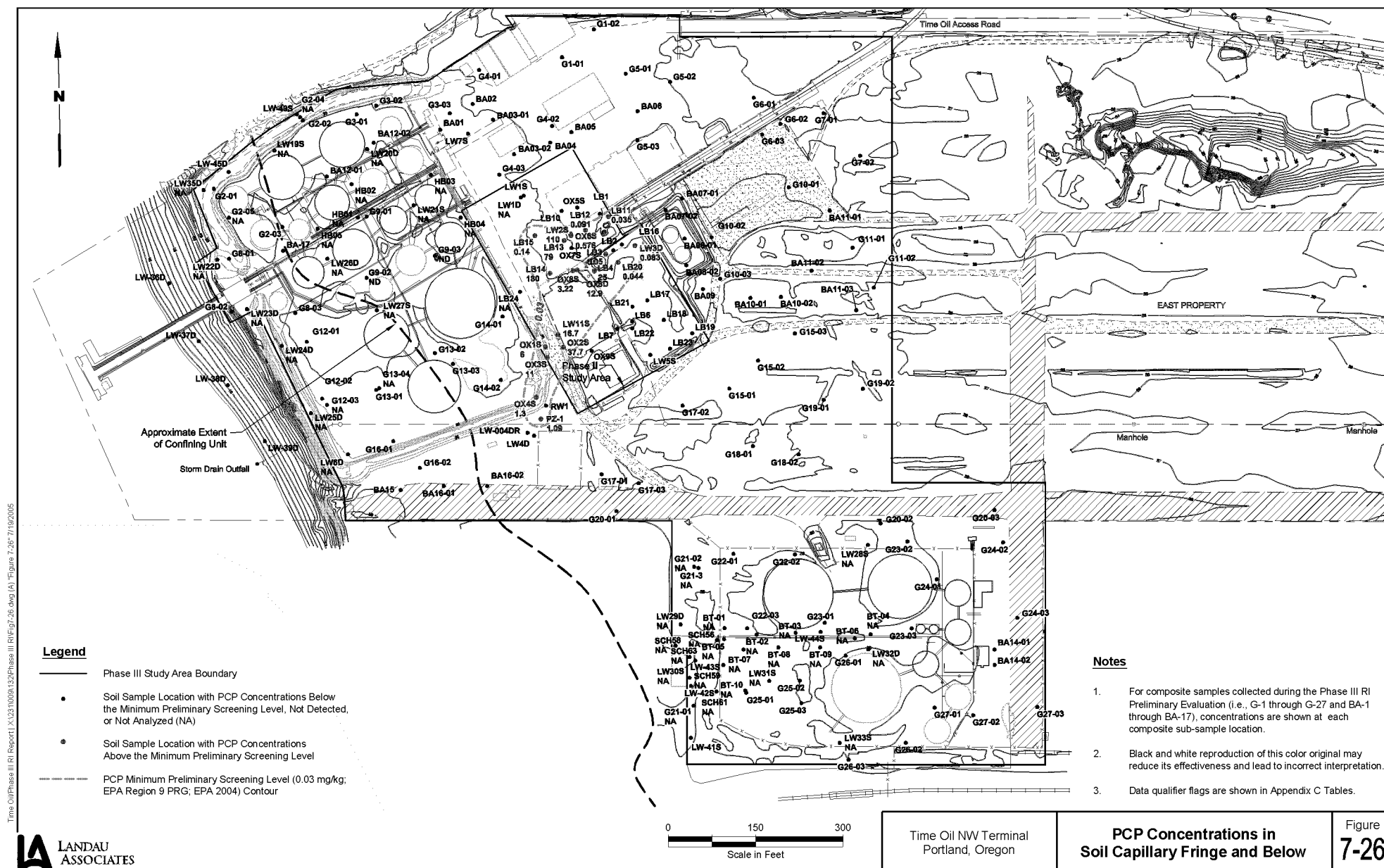


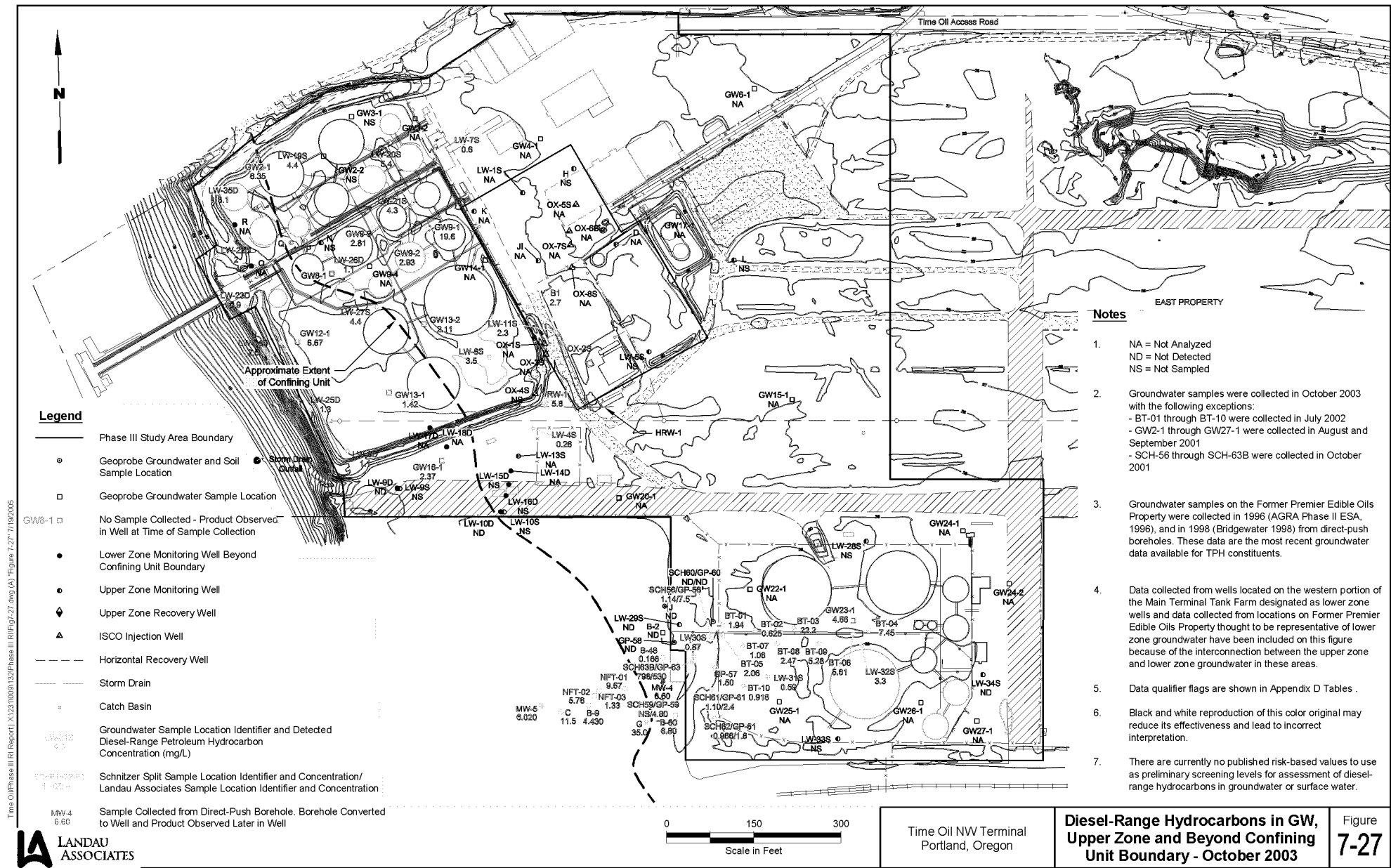


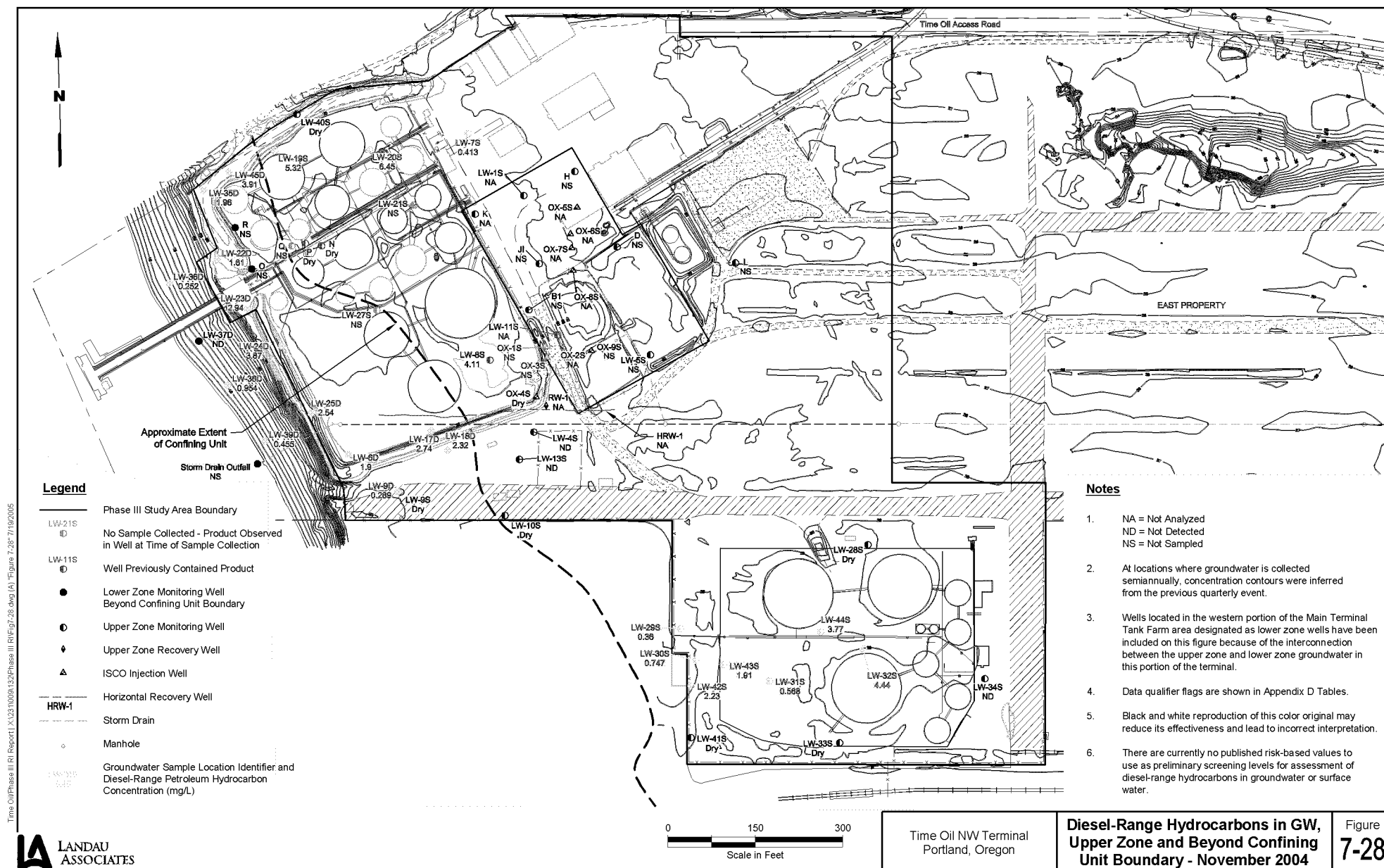


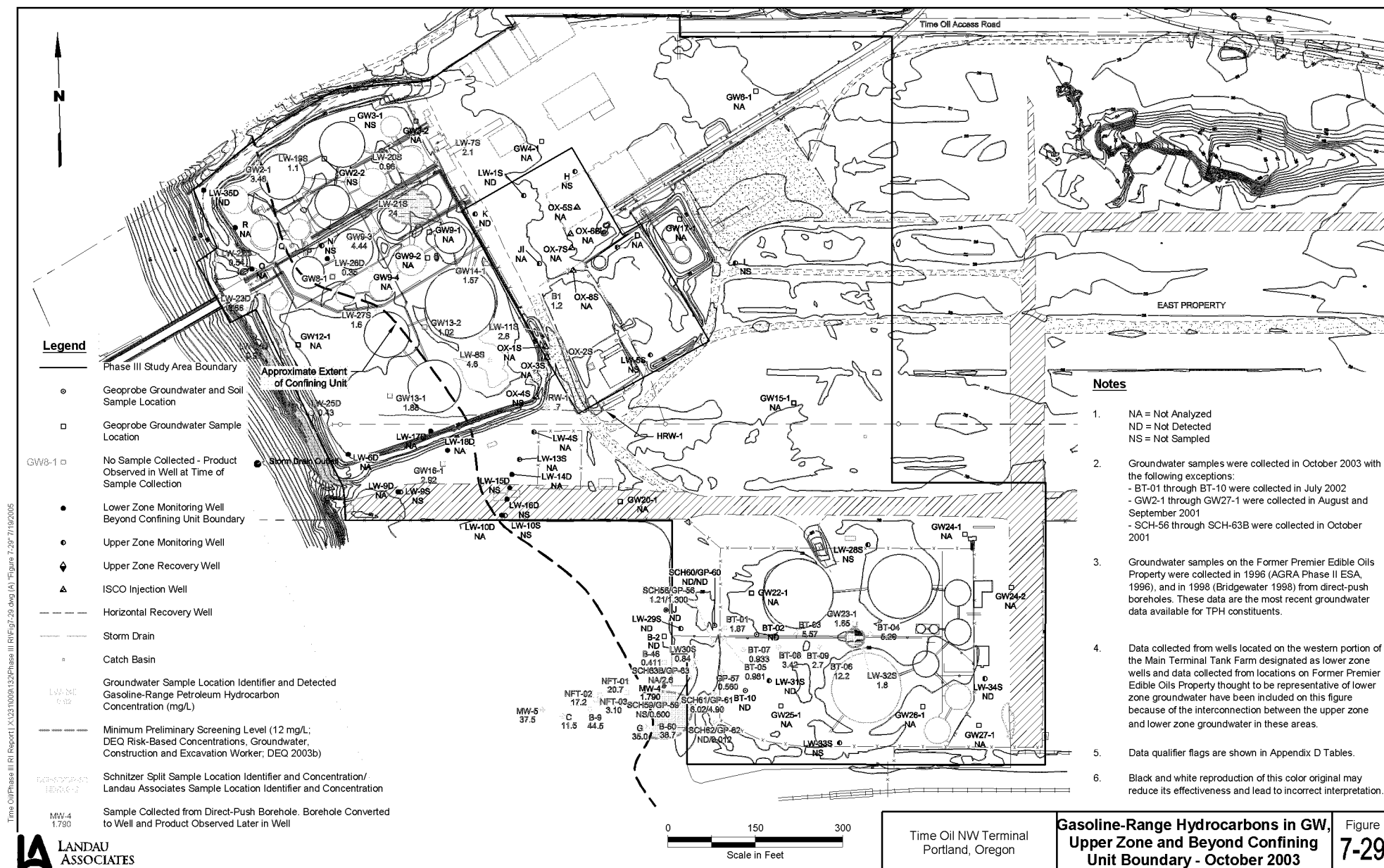
Time OilPhase III RI Report X:\2310091135Phase III RI\Fig7-25.dwg (A) Figure 7-25 7/19/2005



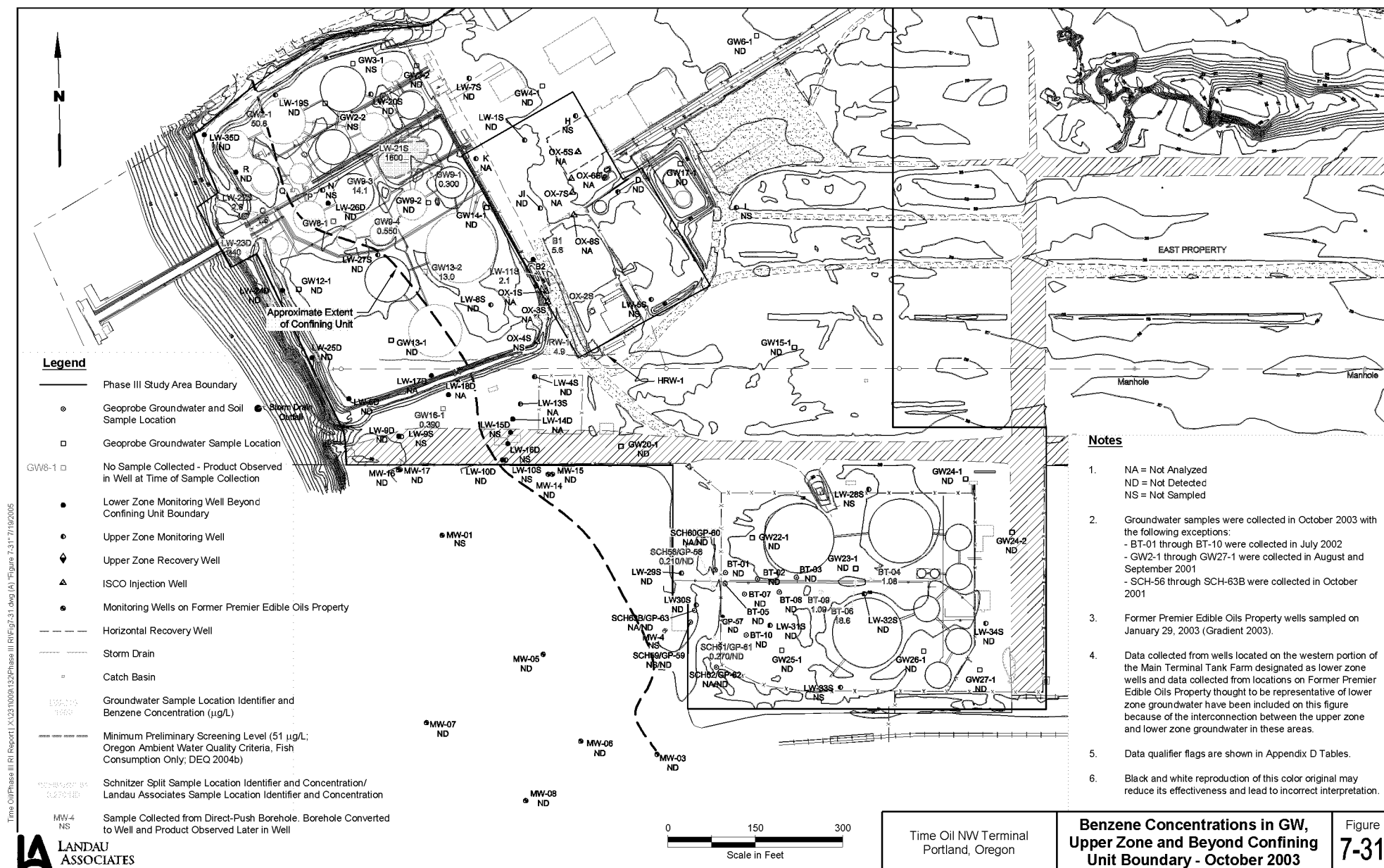


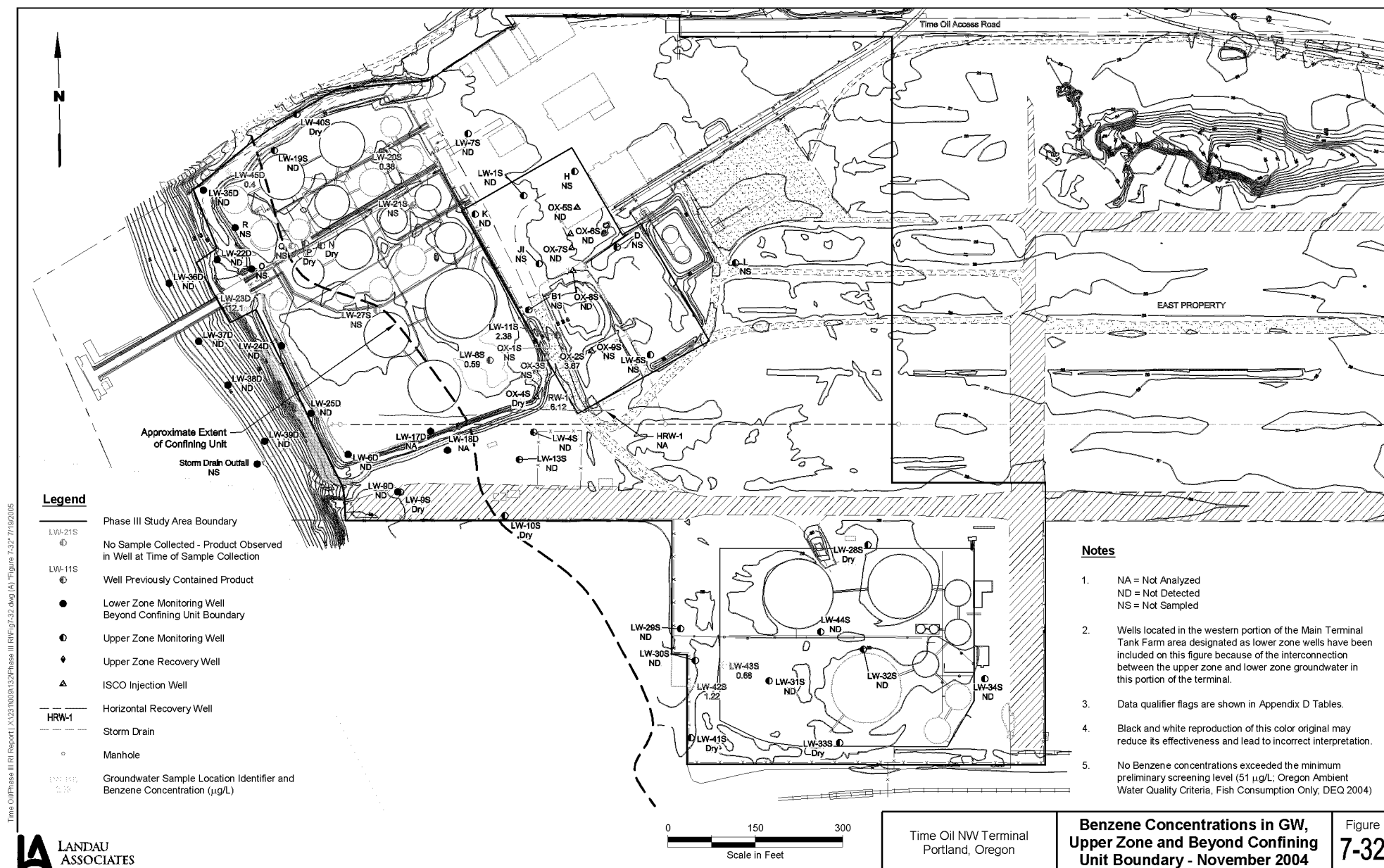


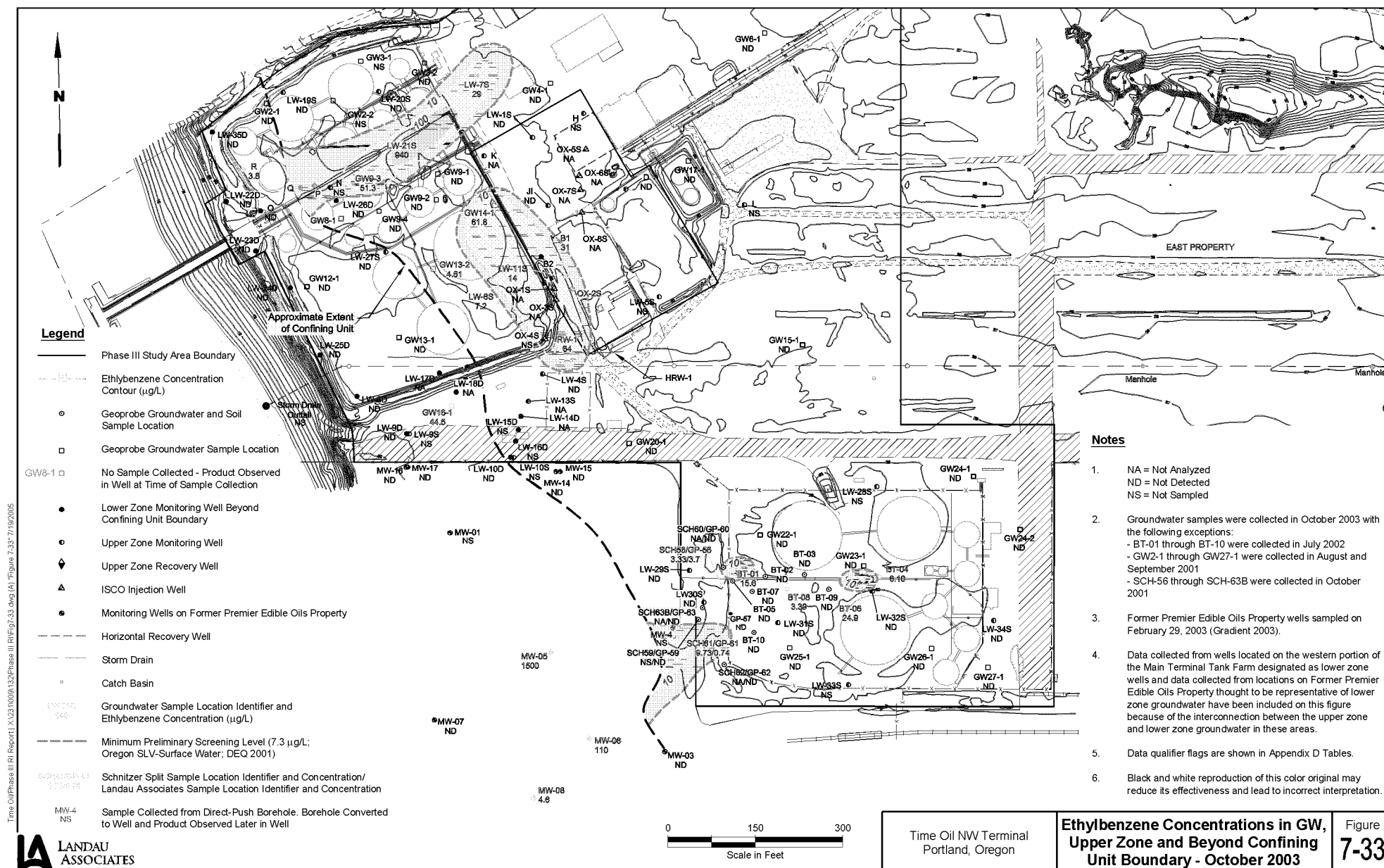


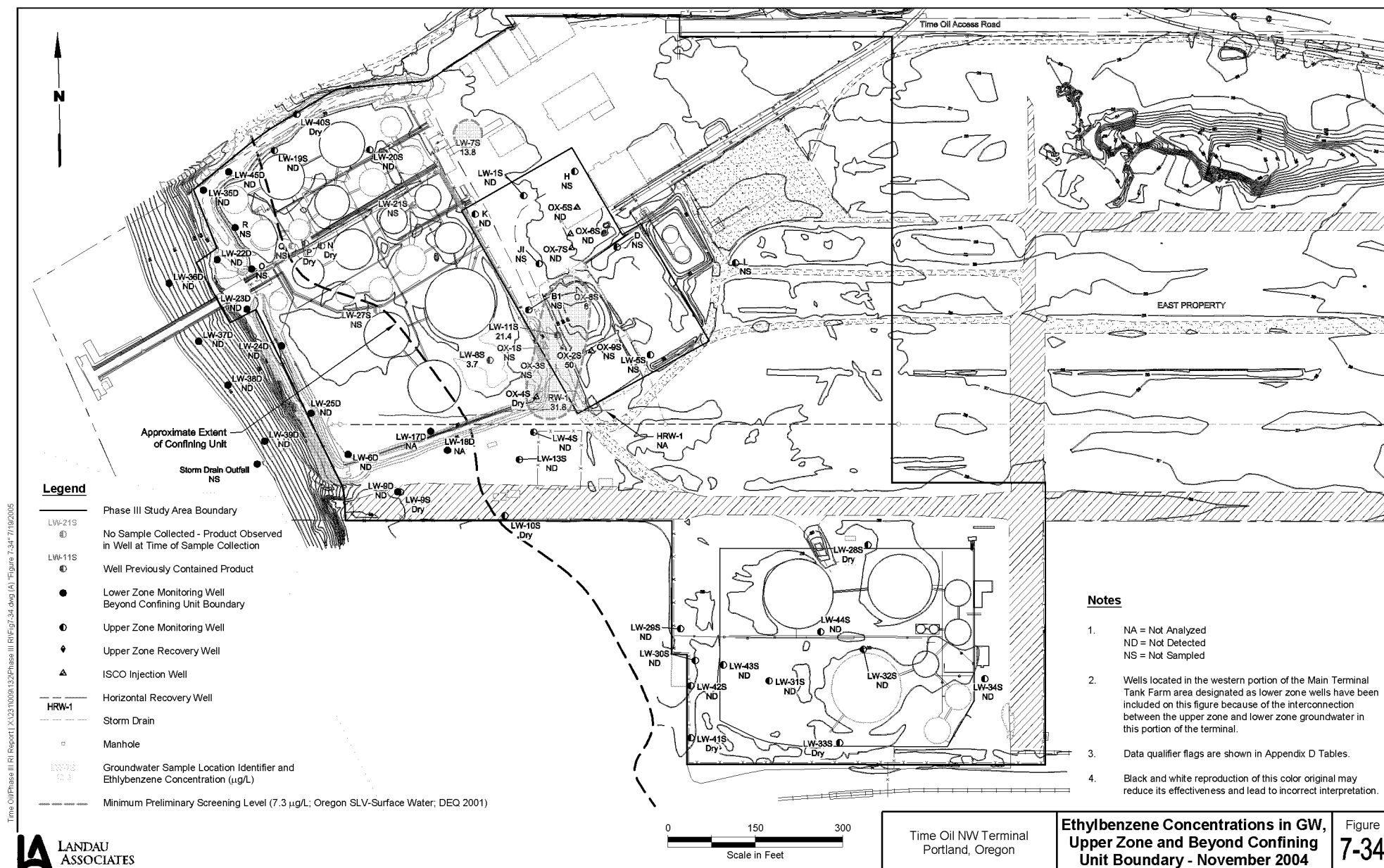


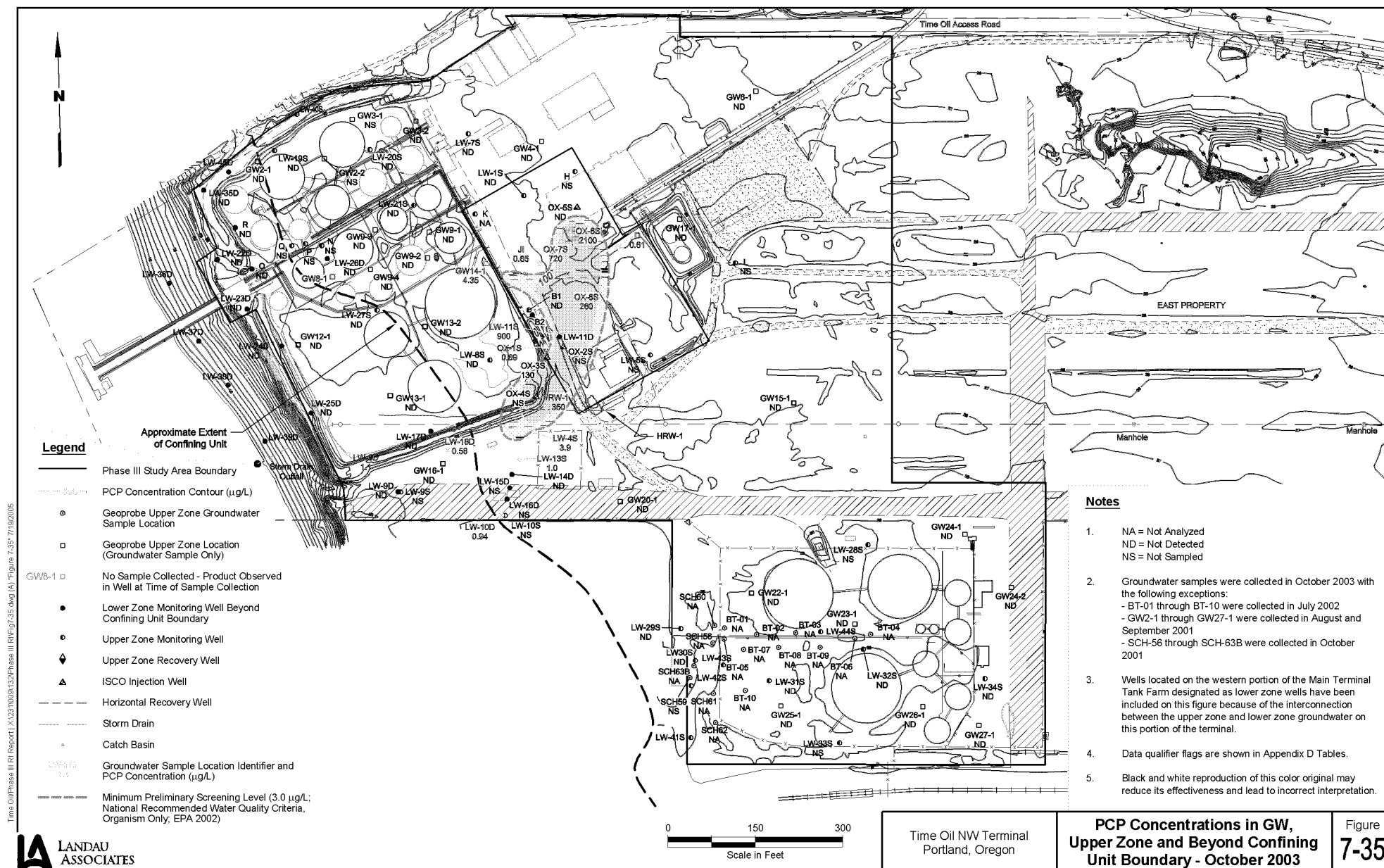


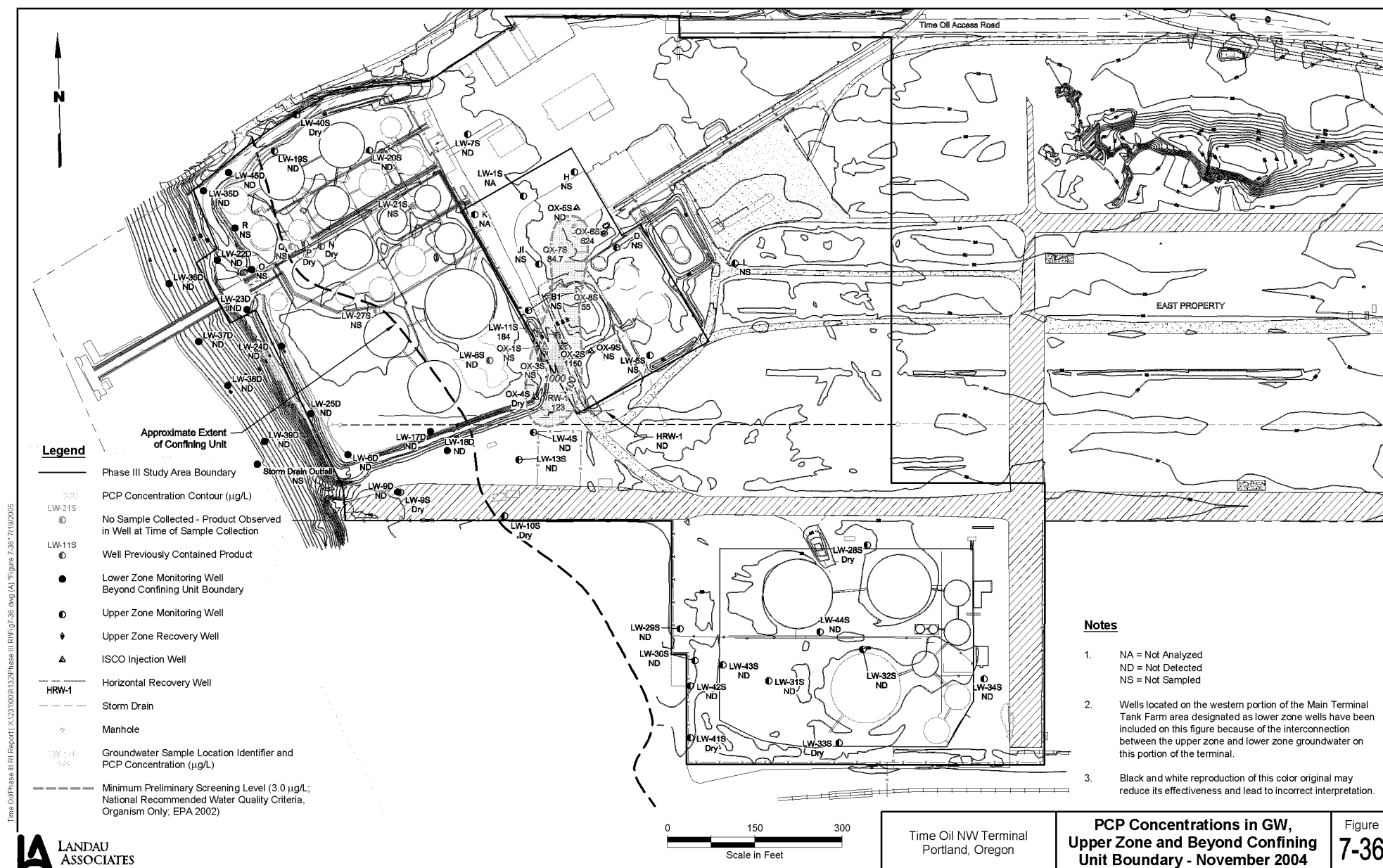


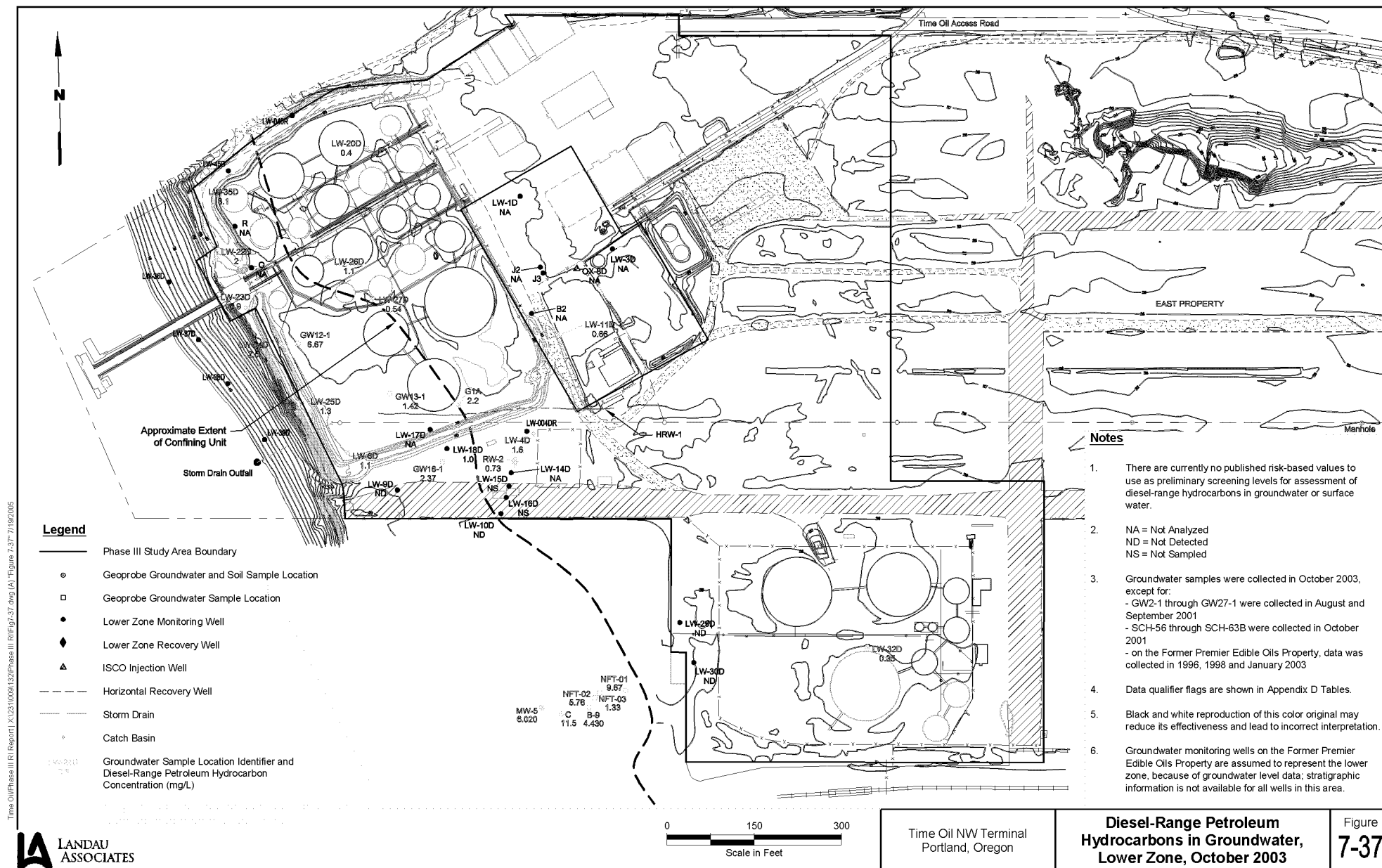


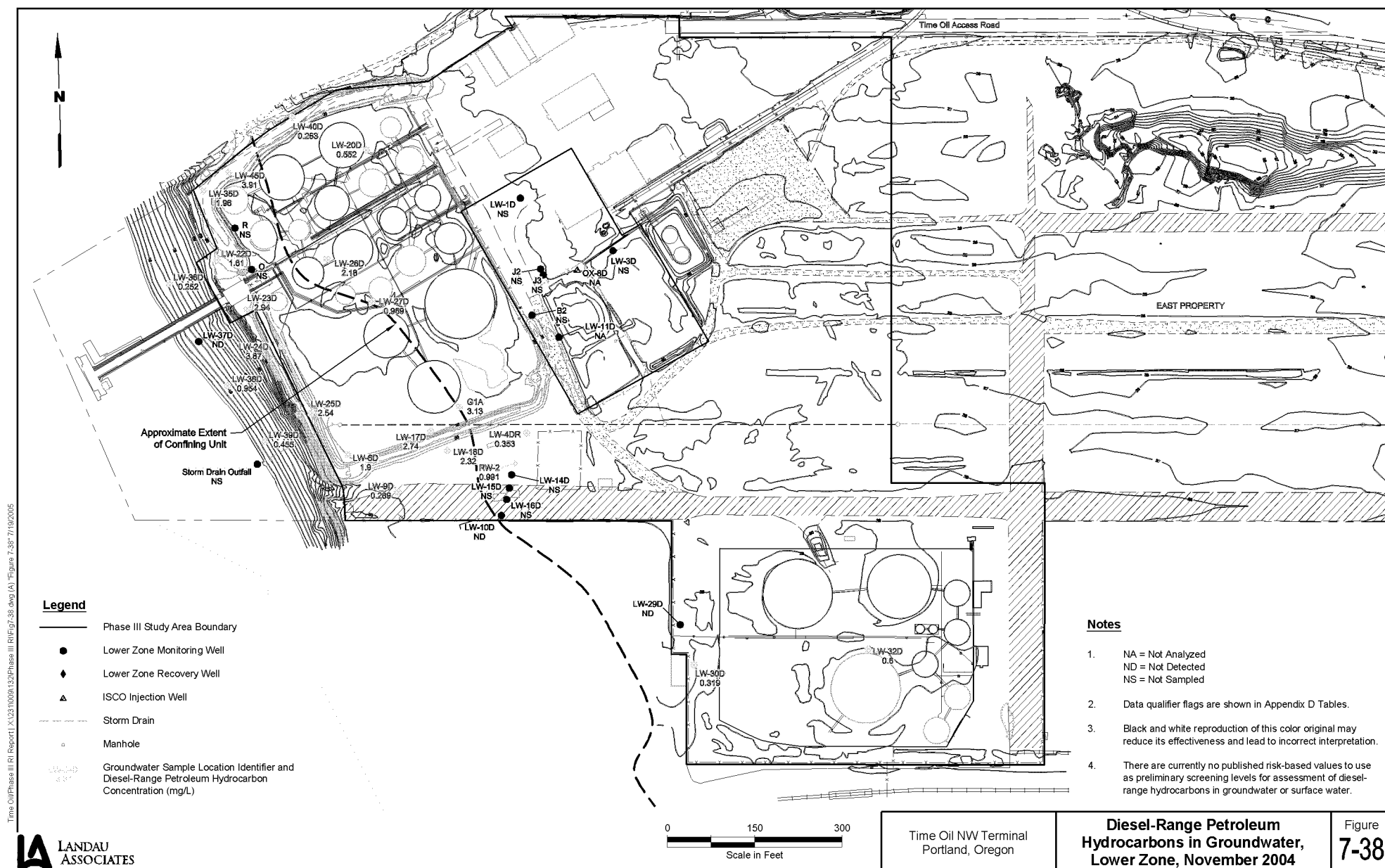


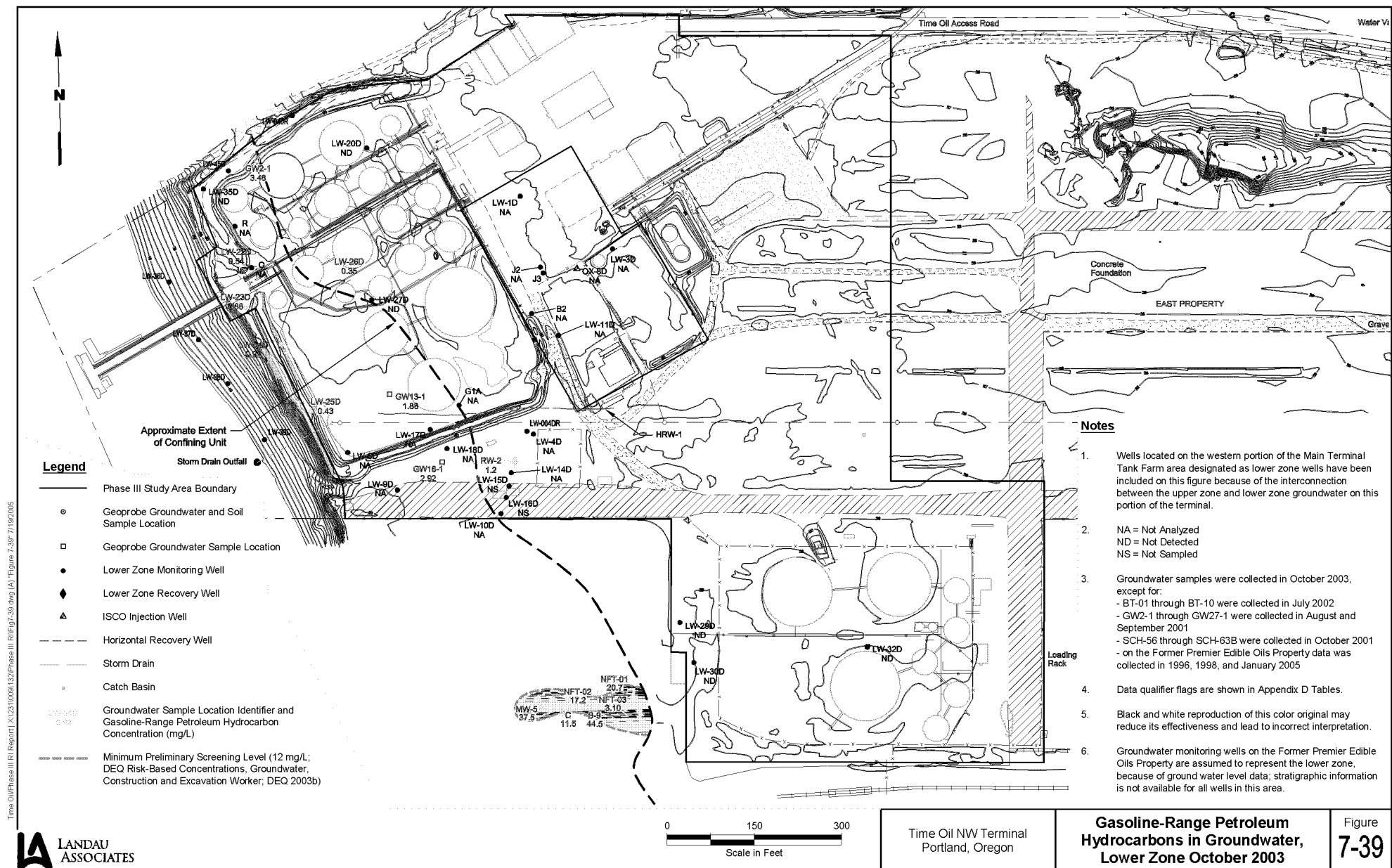


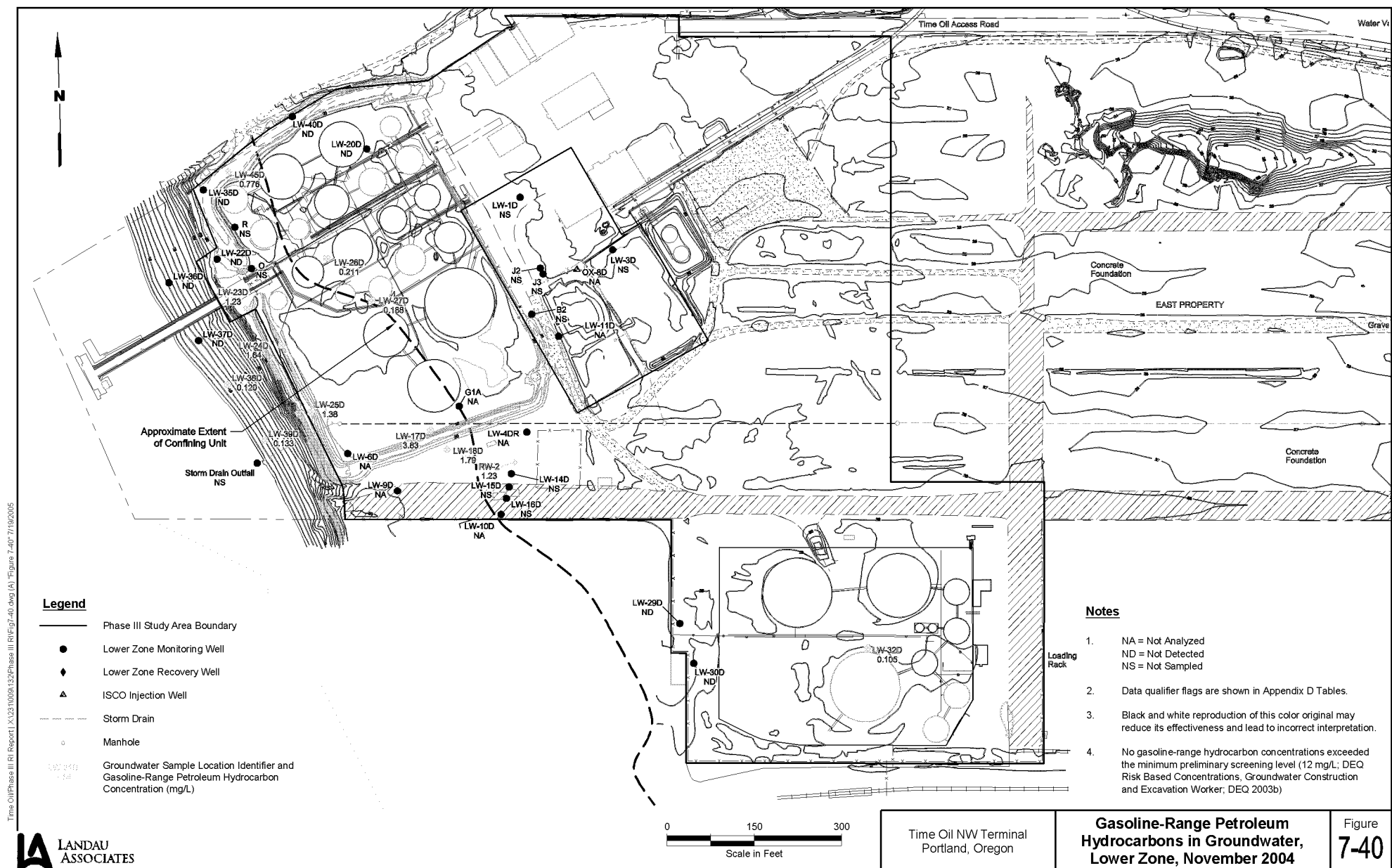


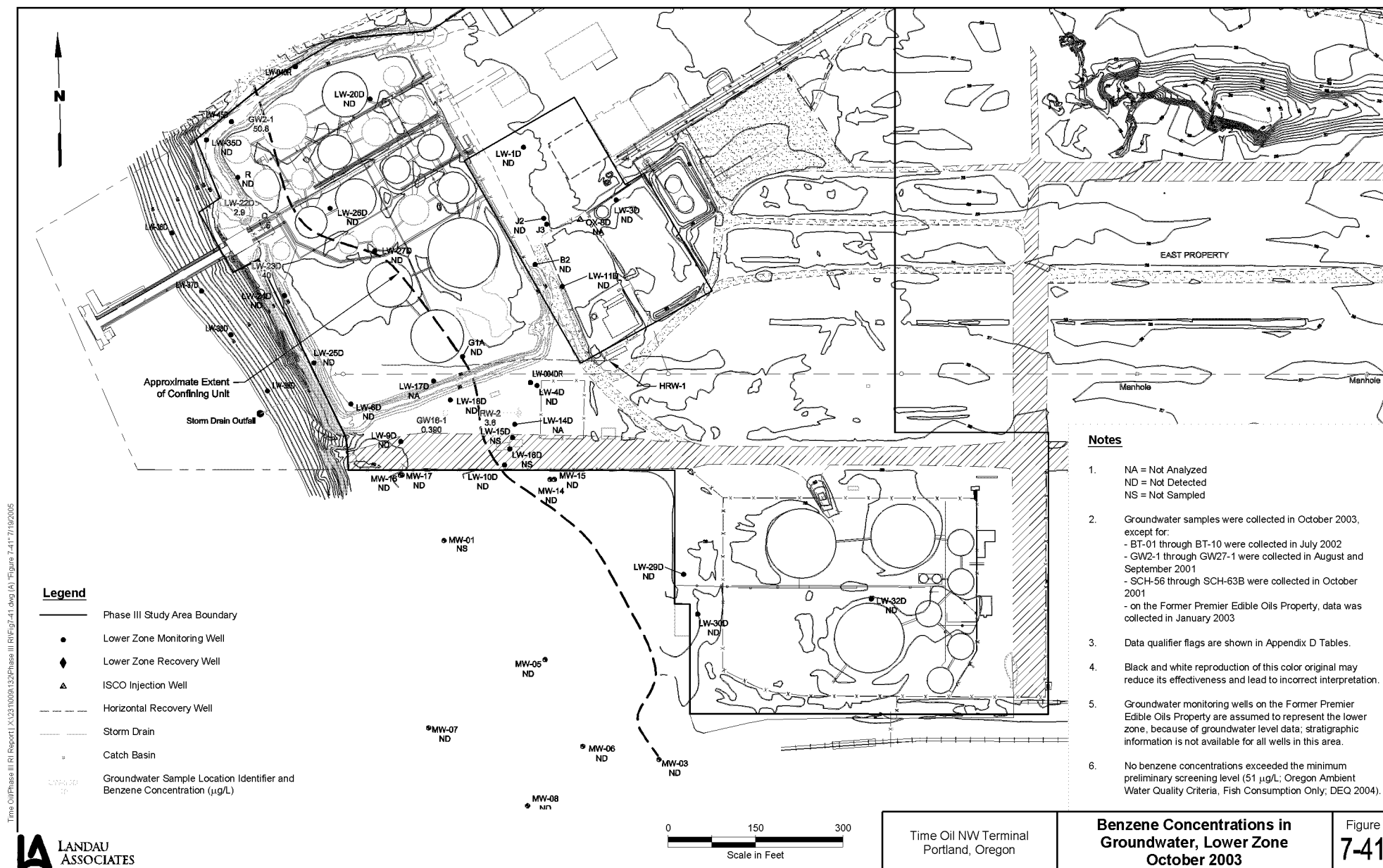


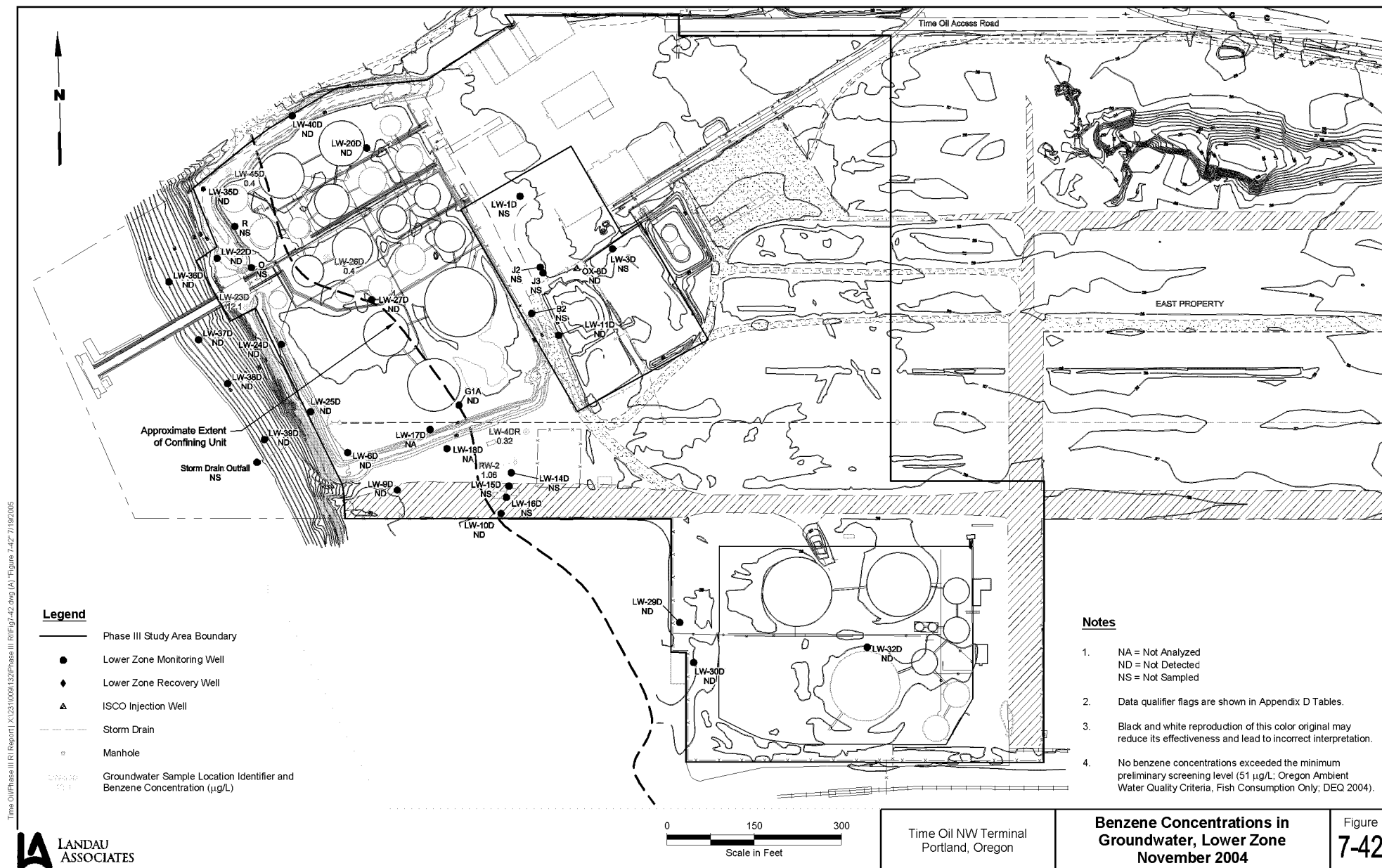


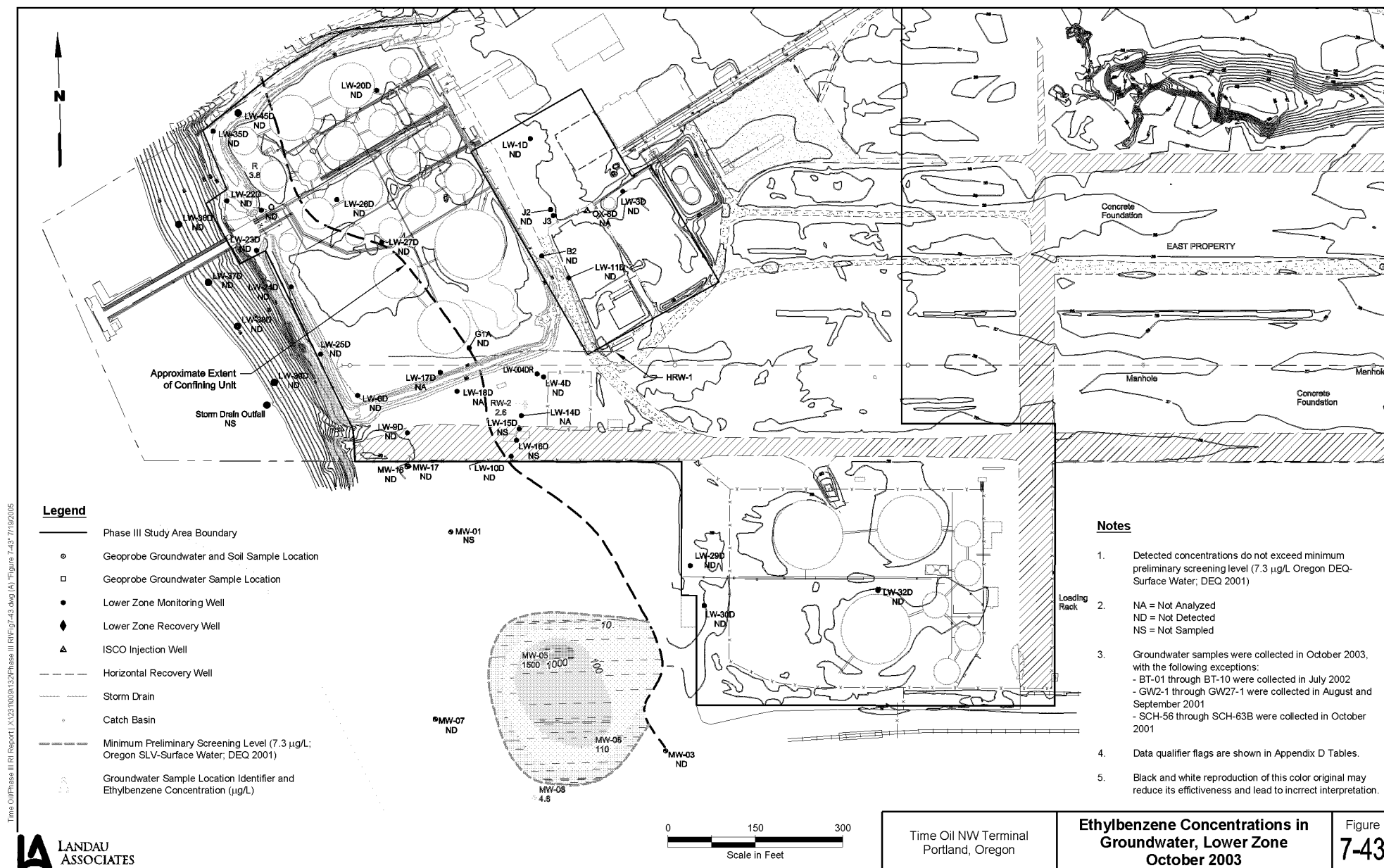


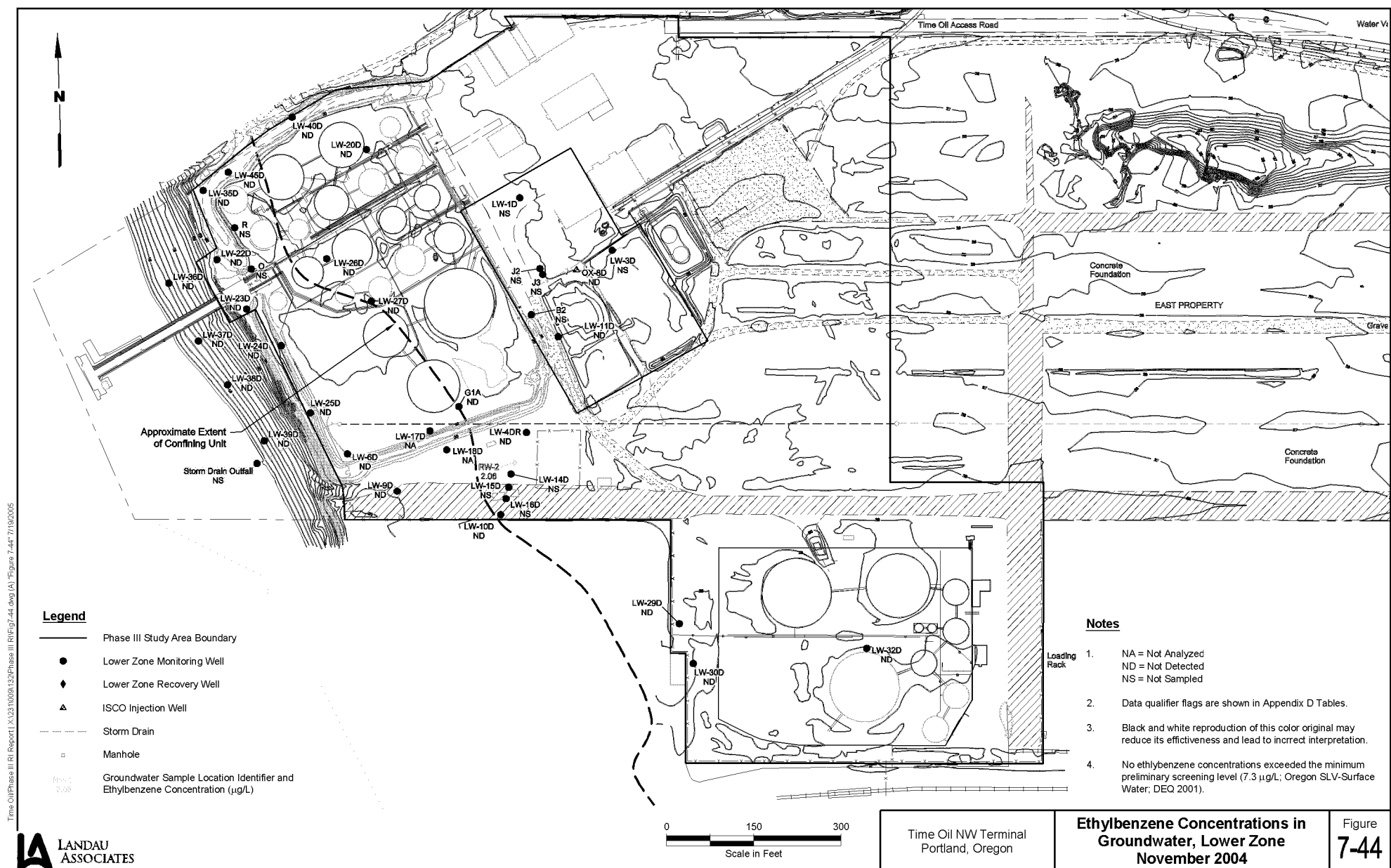


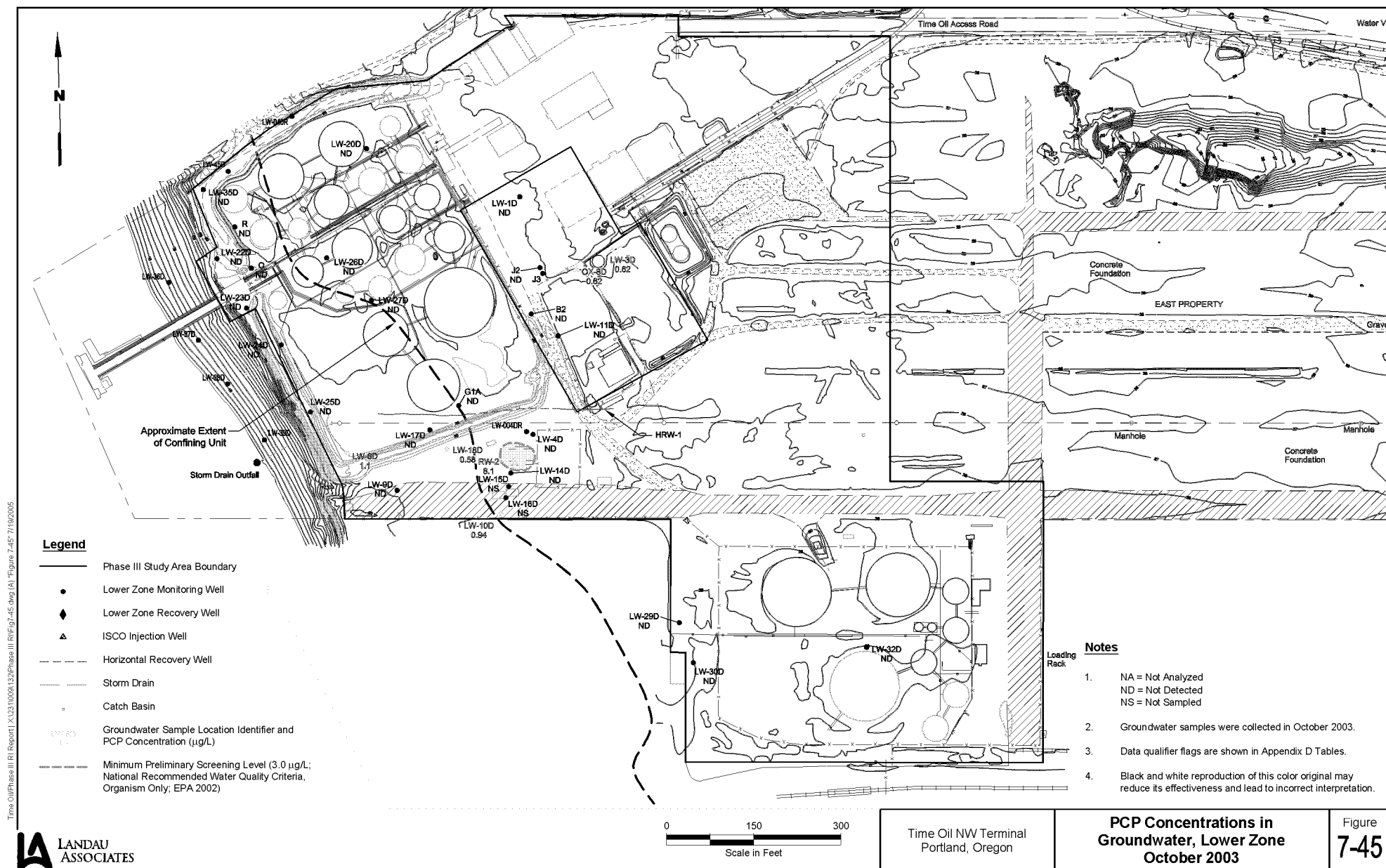




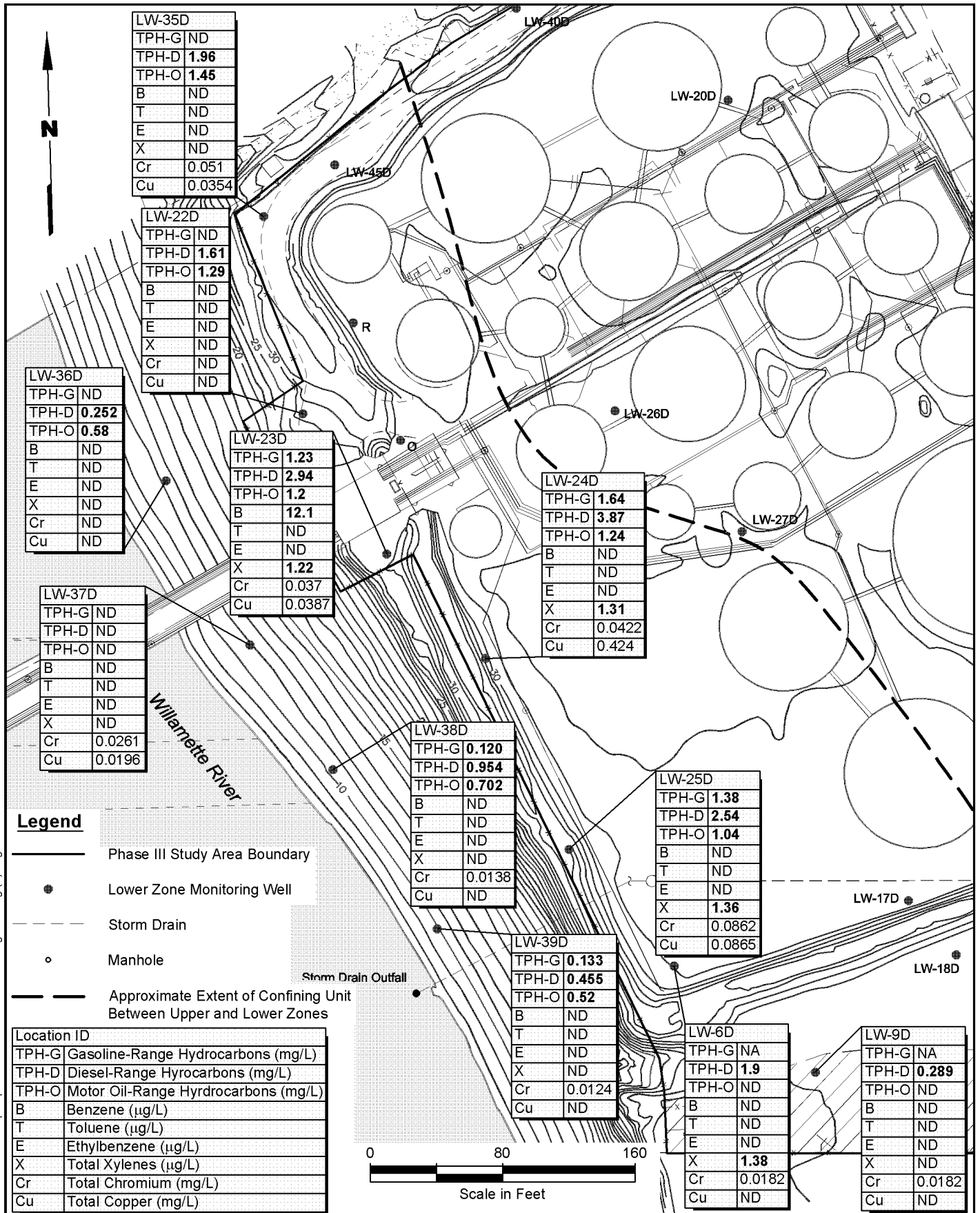








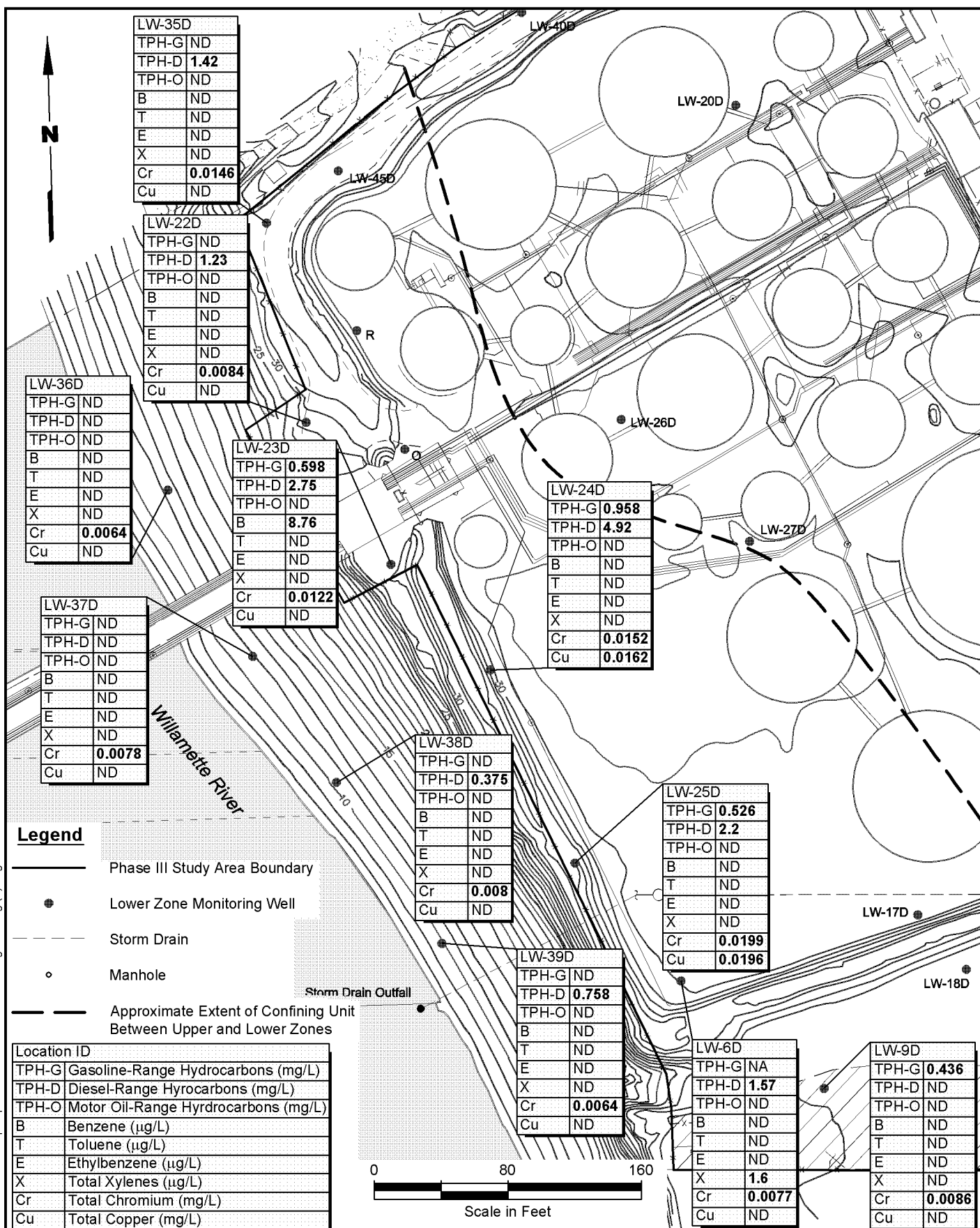




Time Oil NW Terminal
Portland, Oregon

**Groundwater Concentrations,
Nearshore Wells, Selected Analytes
4th Quarter 2004**

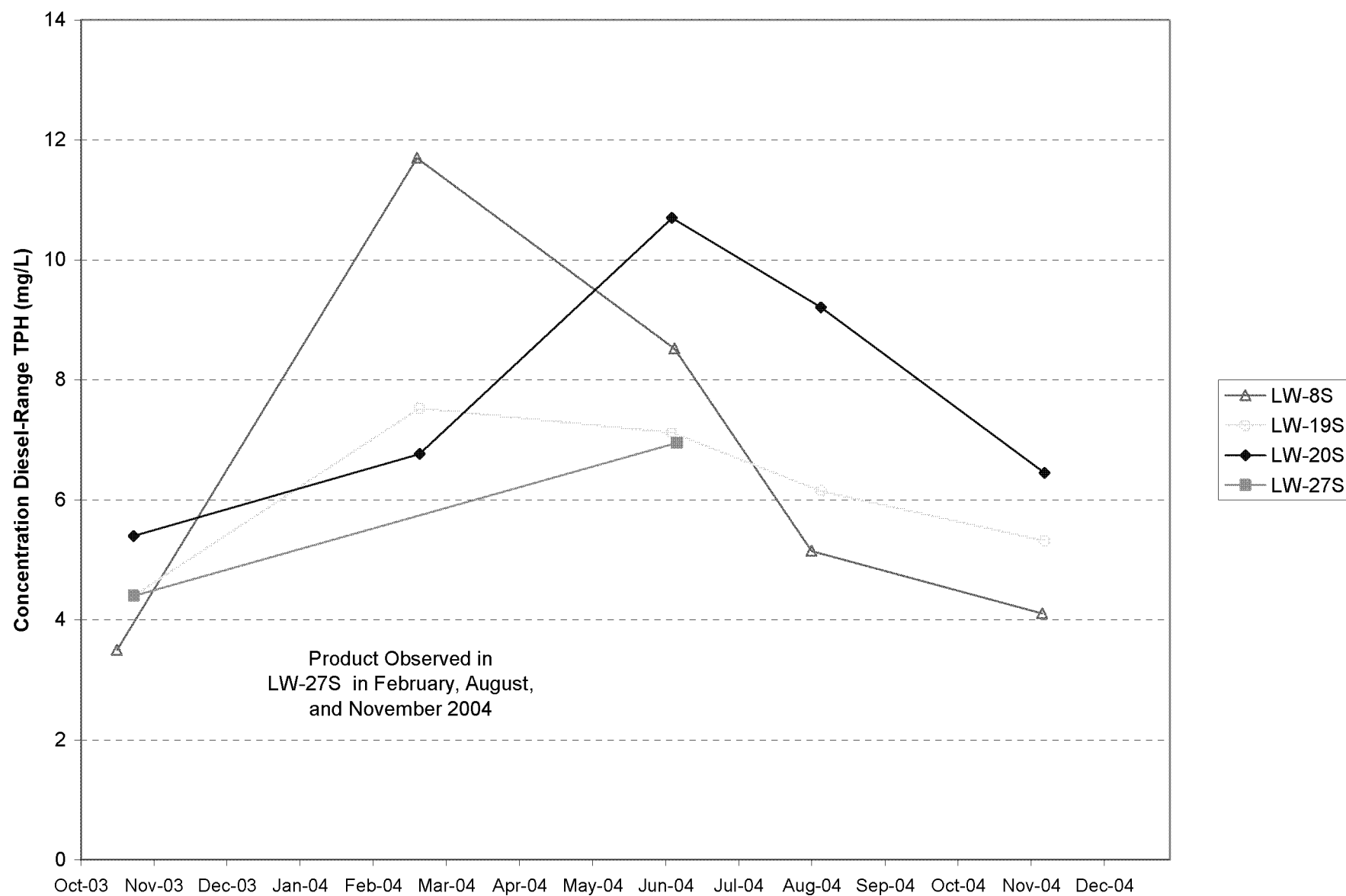
Figure
7-47

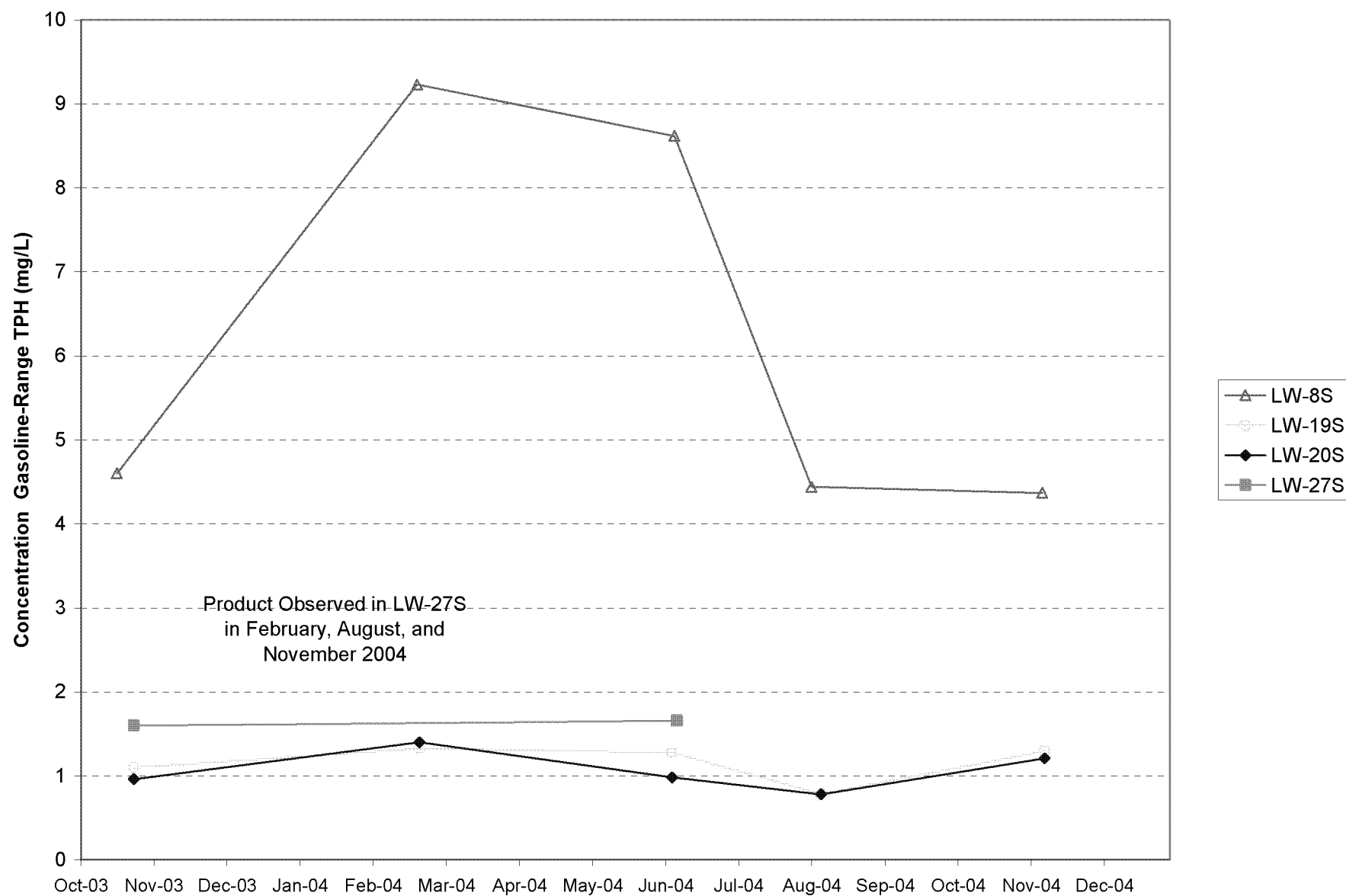


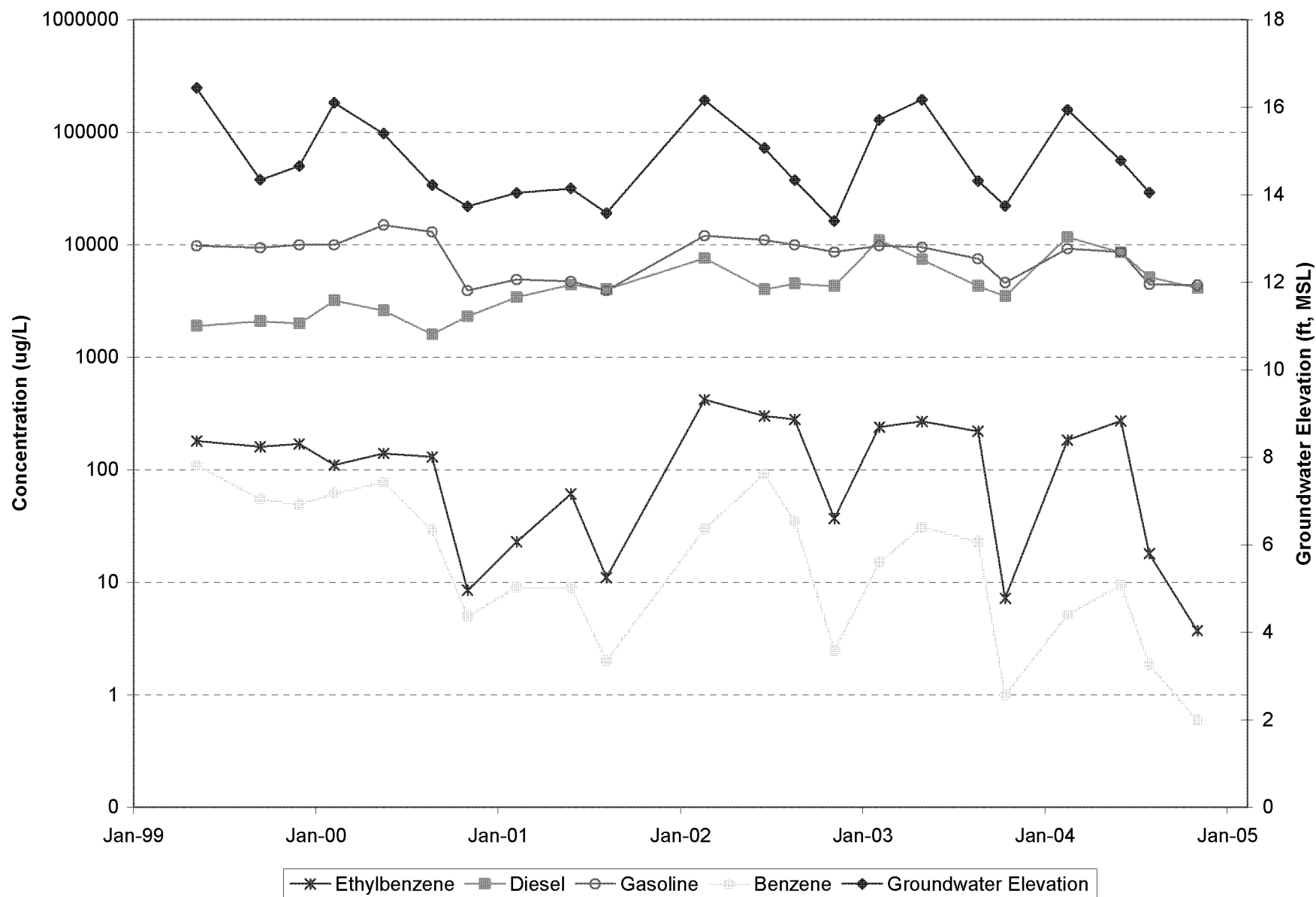
Time Oil NW Terminal
Portland, Oregon

**Groundwater Concentrations,
Nearshore Wells, Selected Analytes
1st Quarter 2005**

Figure
7-48



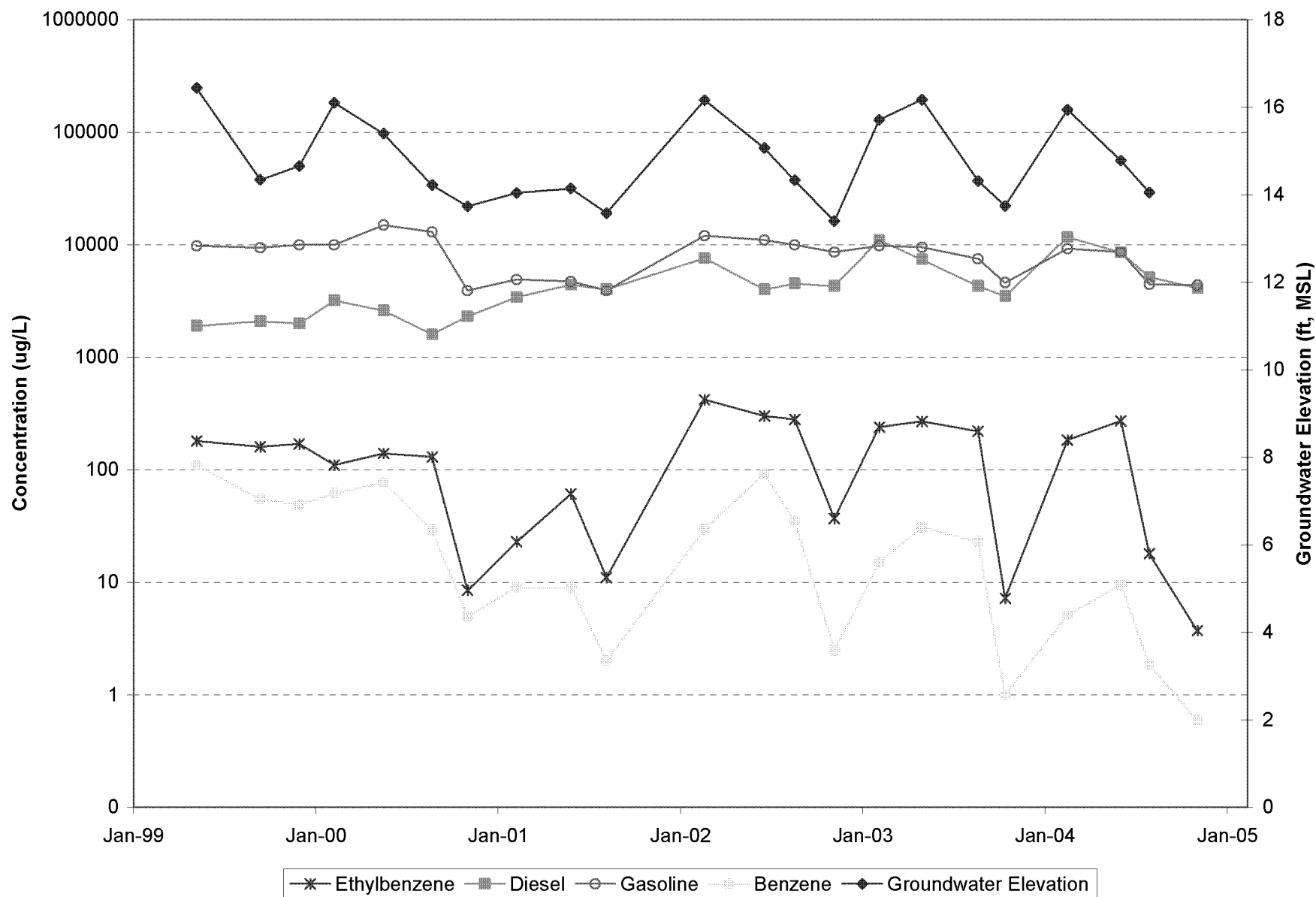




Time Oil NW Terminal
Portland, Oregon

**Selected Constituents
Well LW-8S, Upper Zone
Main Tank Farm Area**

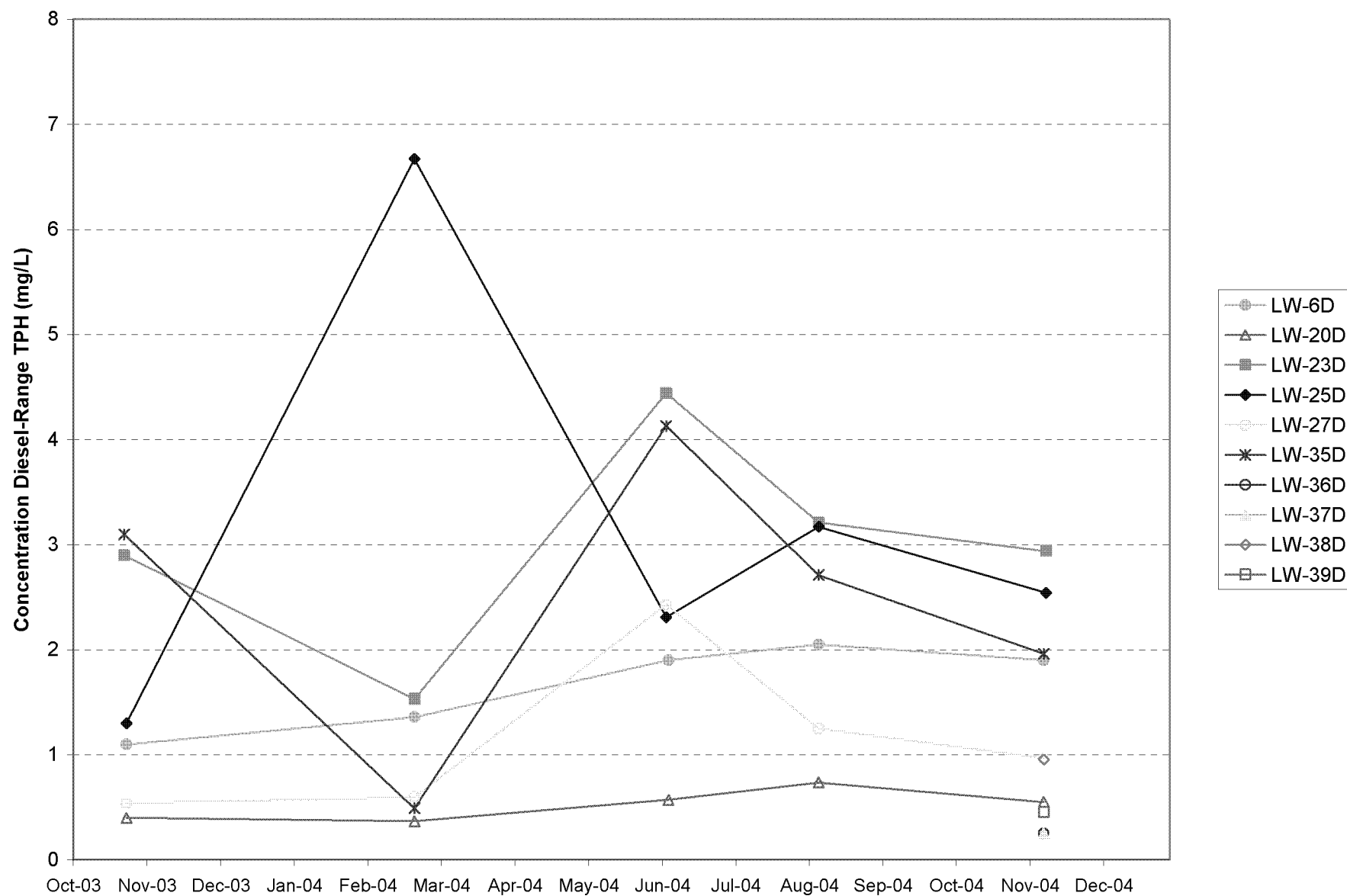
Figure
7-51

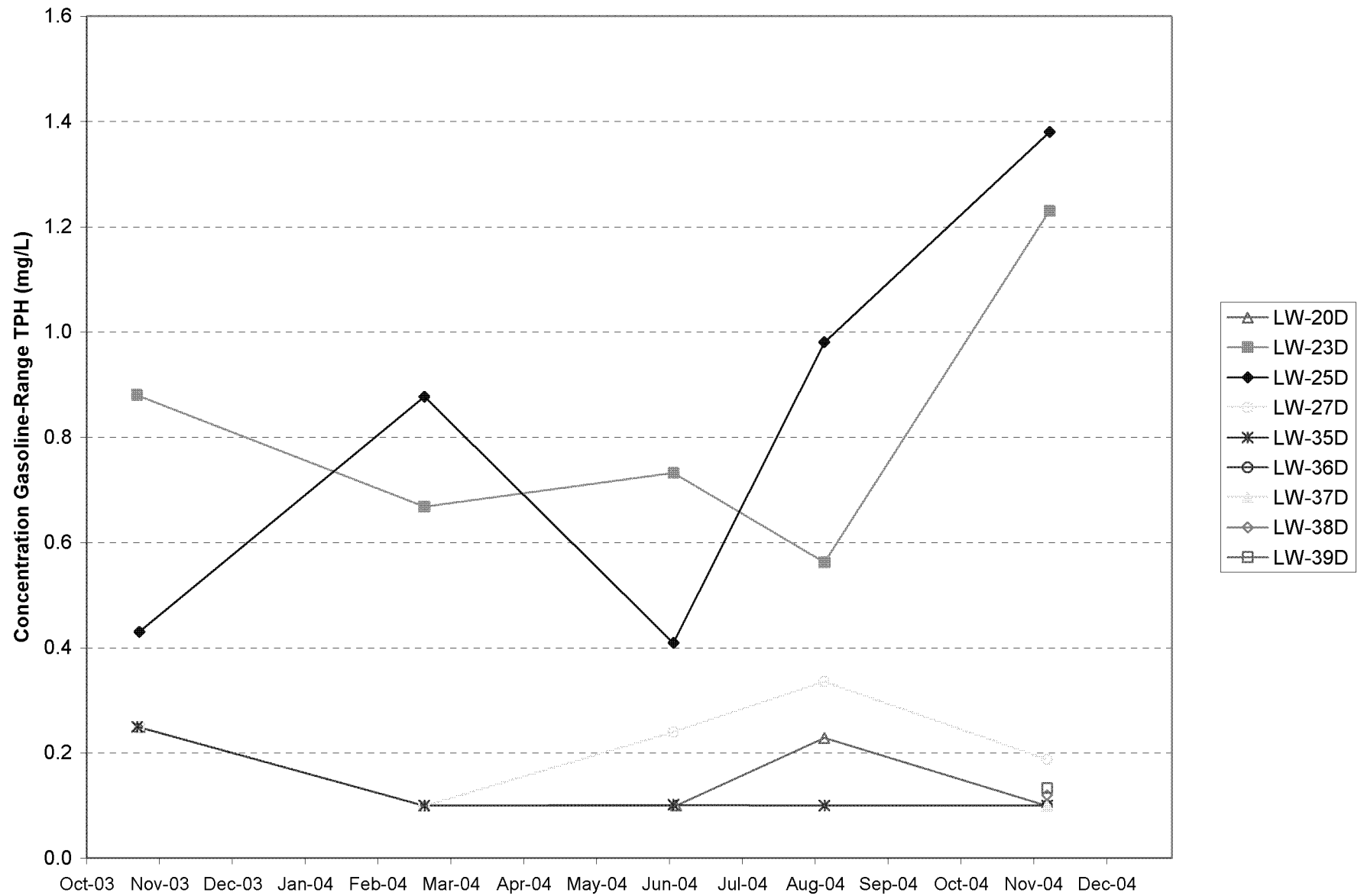


Time Oil NW Terminal
Portland, Oregon

**Selected Constituents
Well LW-8S, Upper Zone
Main Tank Farm Area**

Figure
7-52

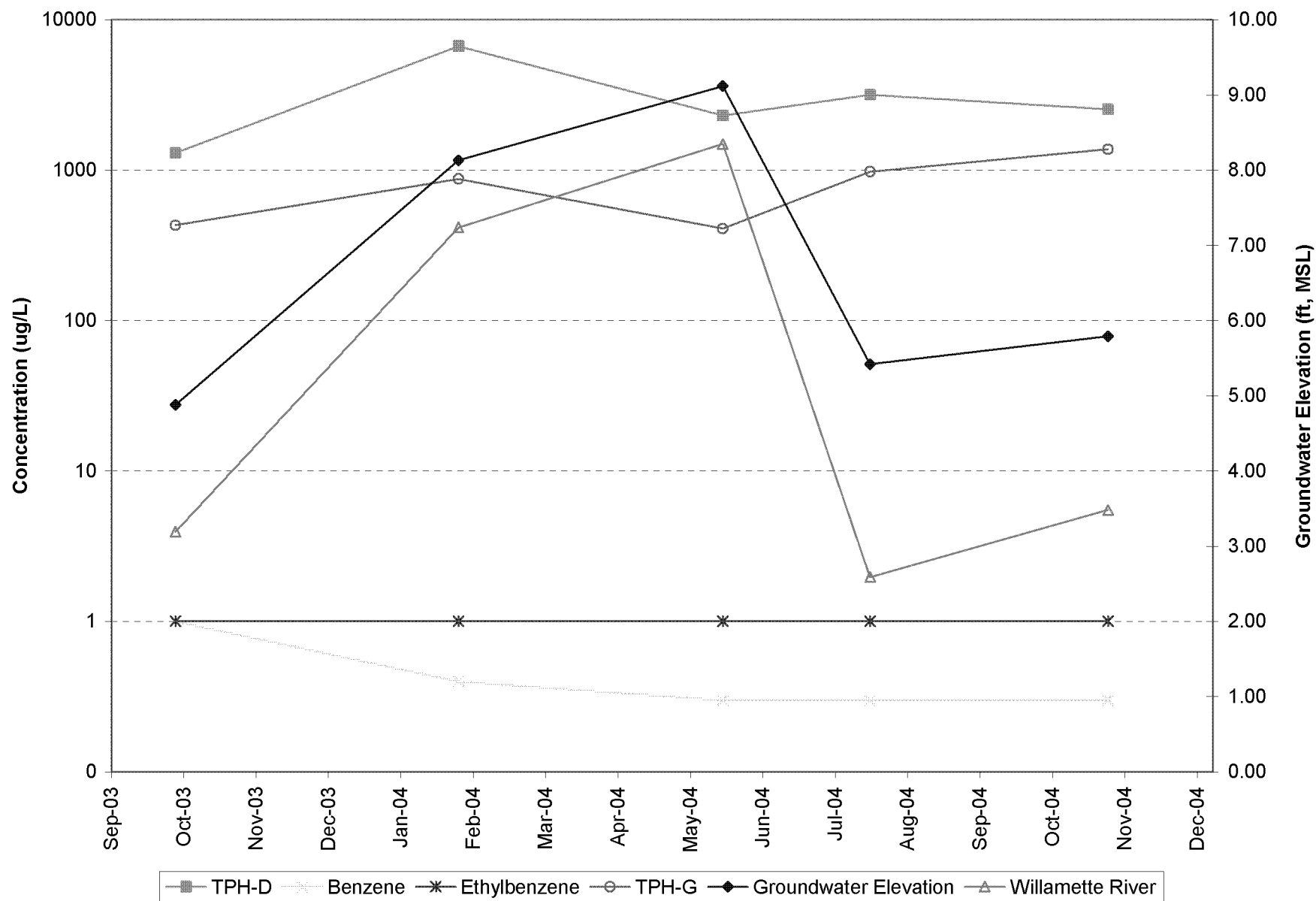




Time Oil NW Terminal
Portland, Oregon

**Gasoline-Range Hydrocarbons
Selected Lower Zone Wells
Main Tank Farm Area**

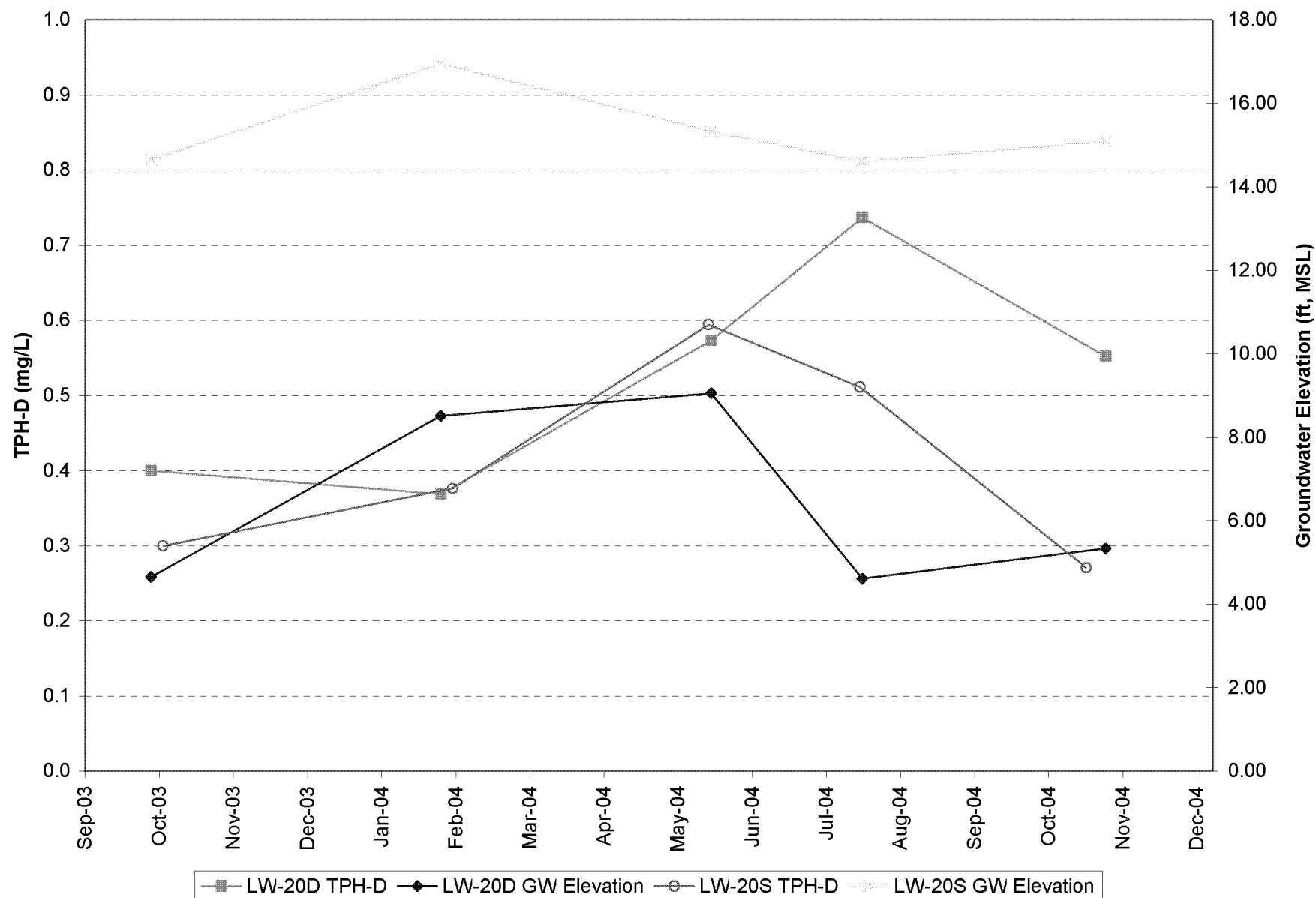
Figure
7-54

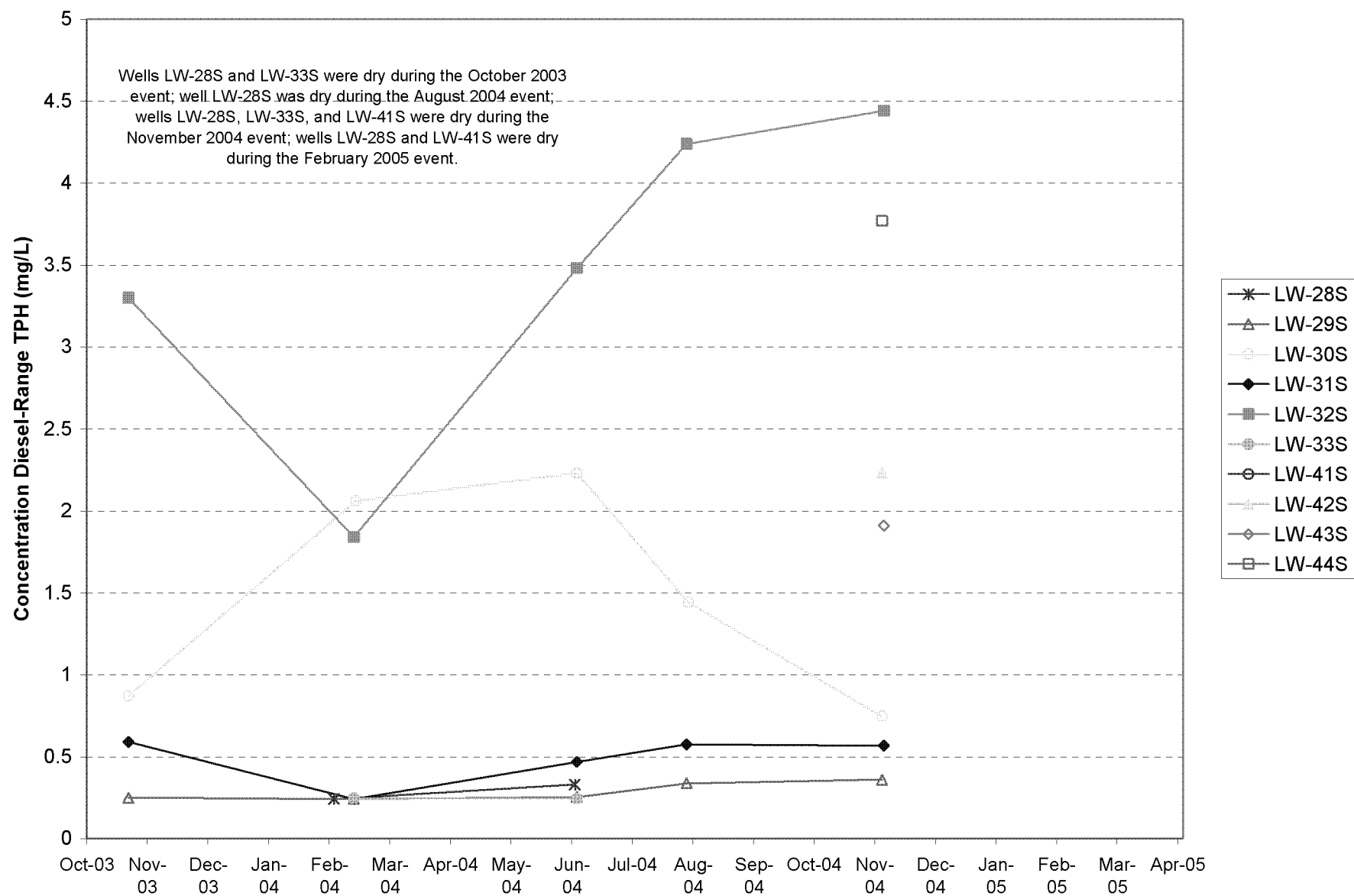


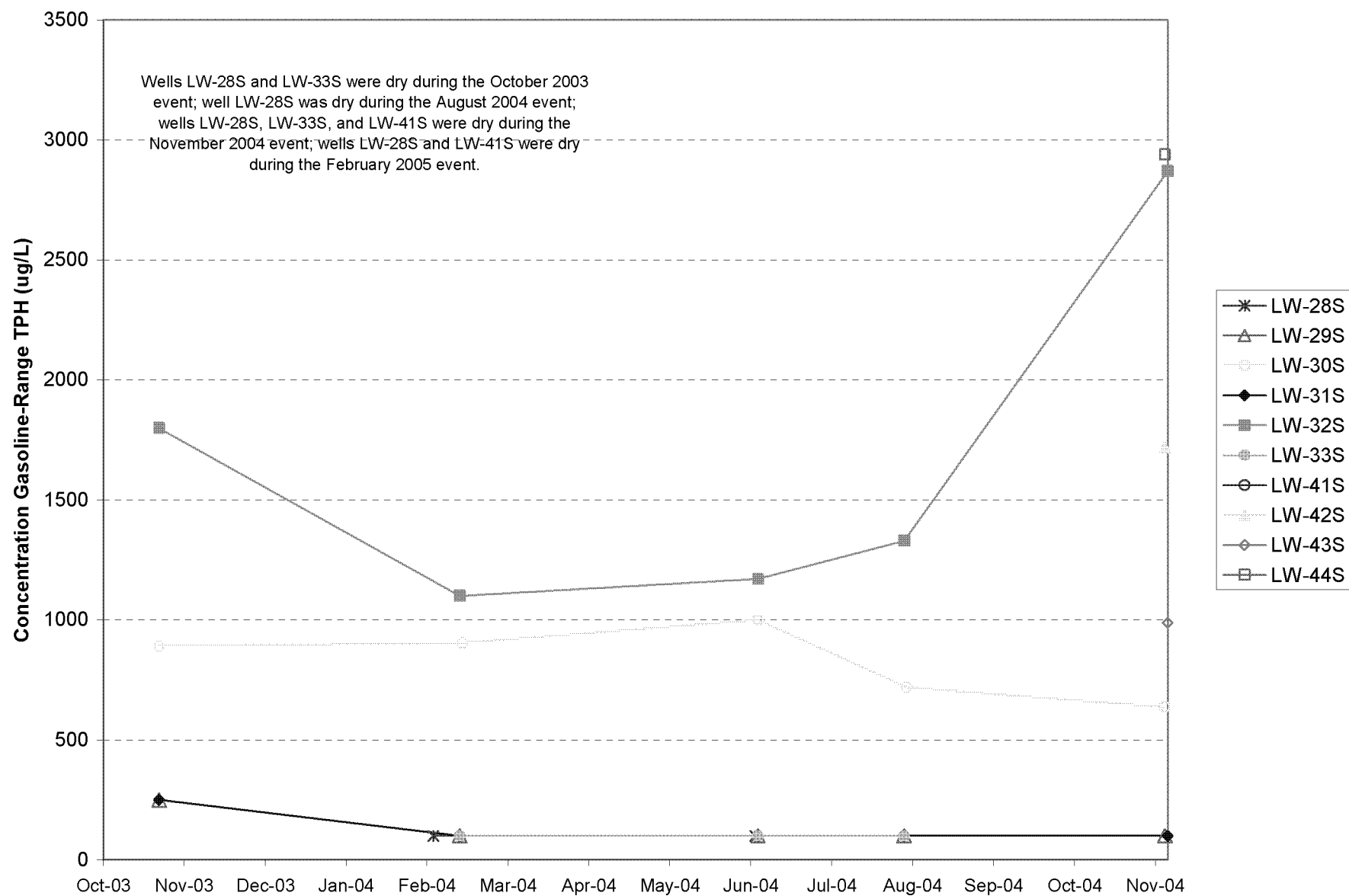
Time Oil NW Terminal
Portland, Oregon

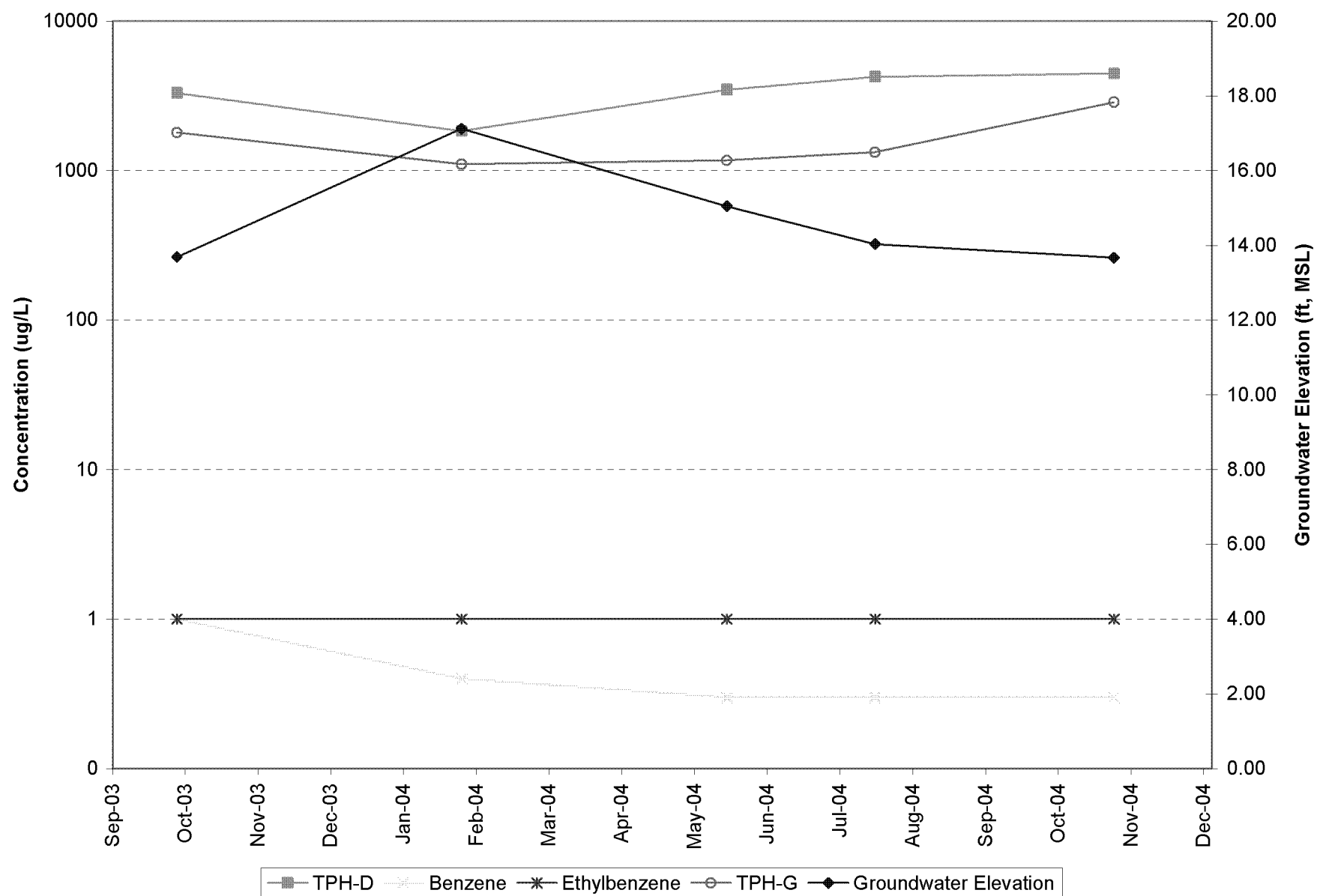
**Selected Constituents
Well LW-25D, Lower Zone
Main Tank Farm Area**

Figure
7-55







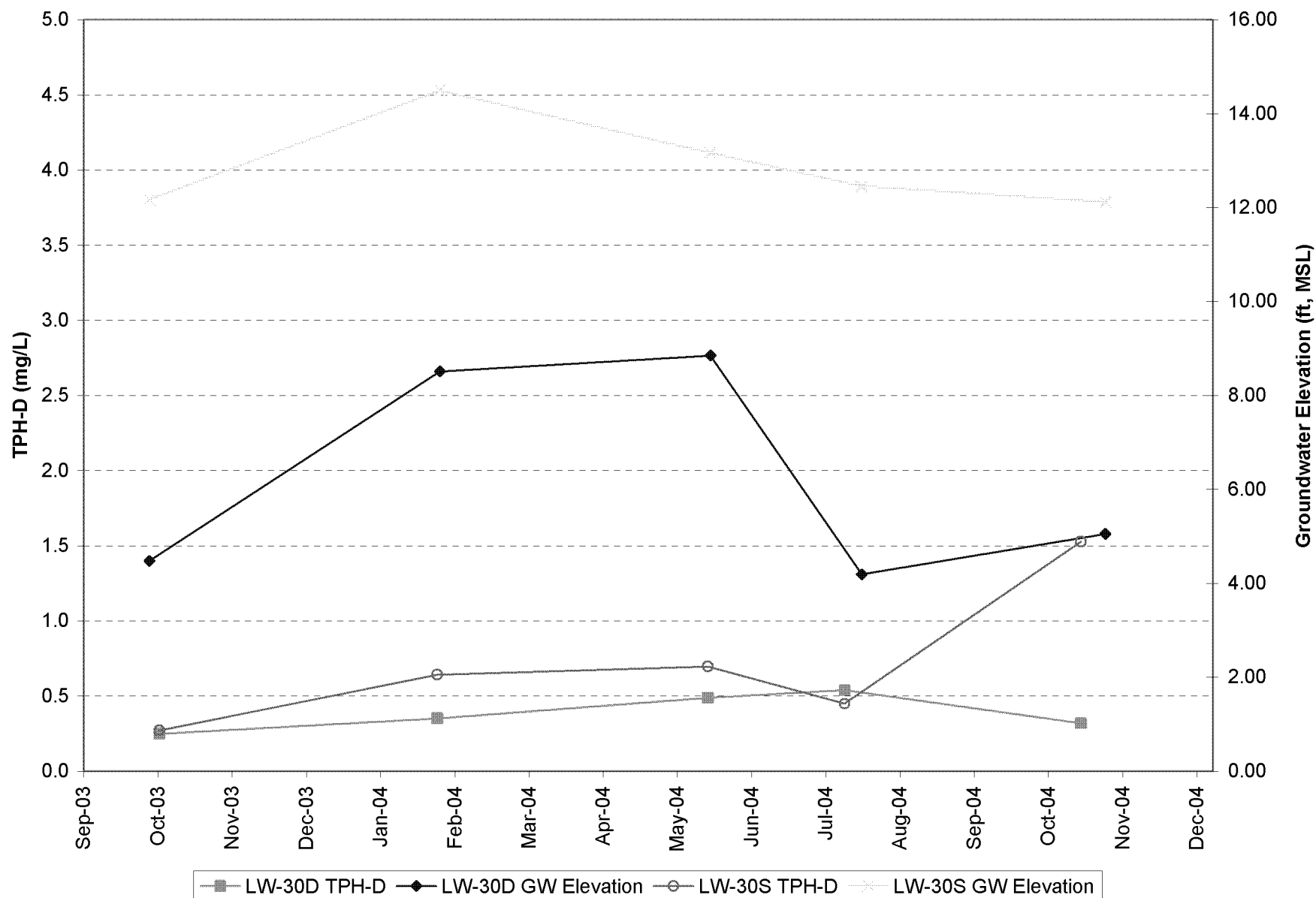


Time Oil NW Terminal
Portland, Oregon

Selected Constituents
Well LW-32S, Upper Zone Bell Terminal

Figure
7-59

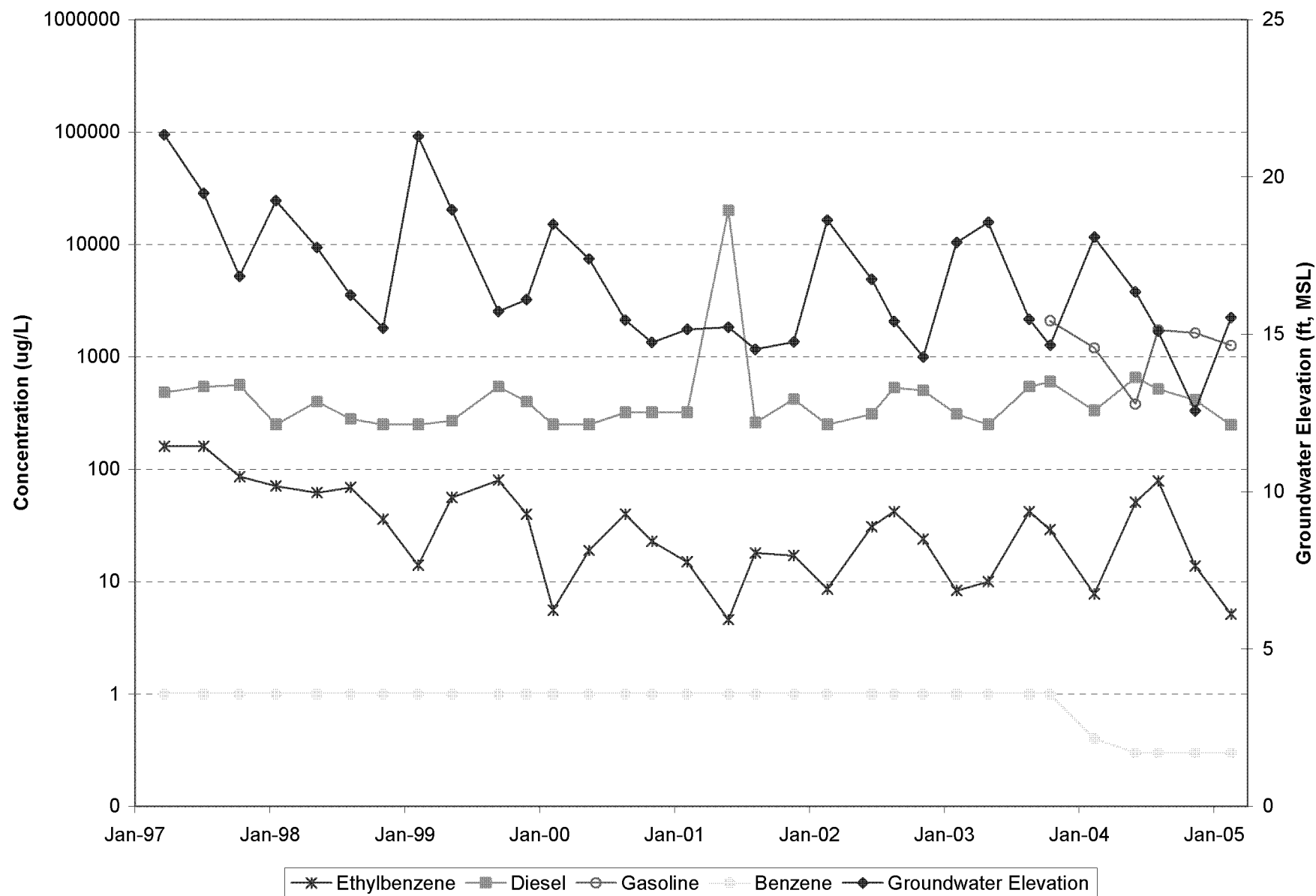
BZTO104(e)022944

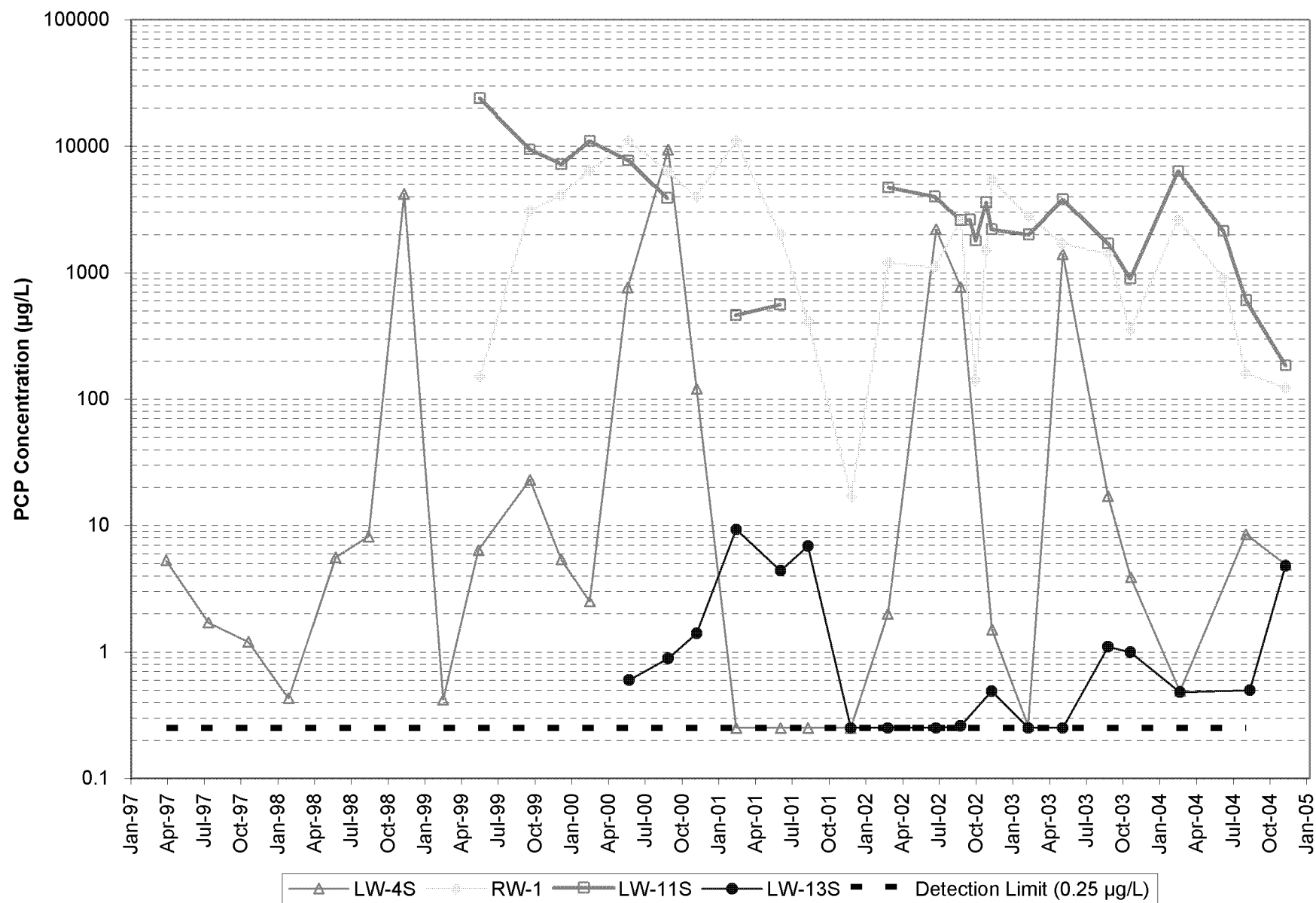


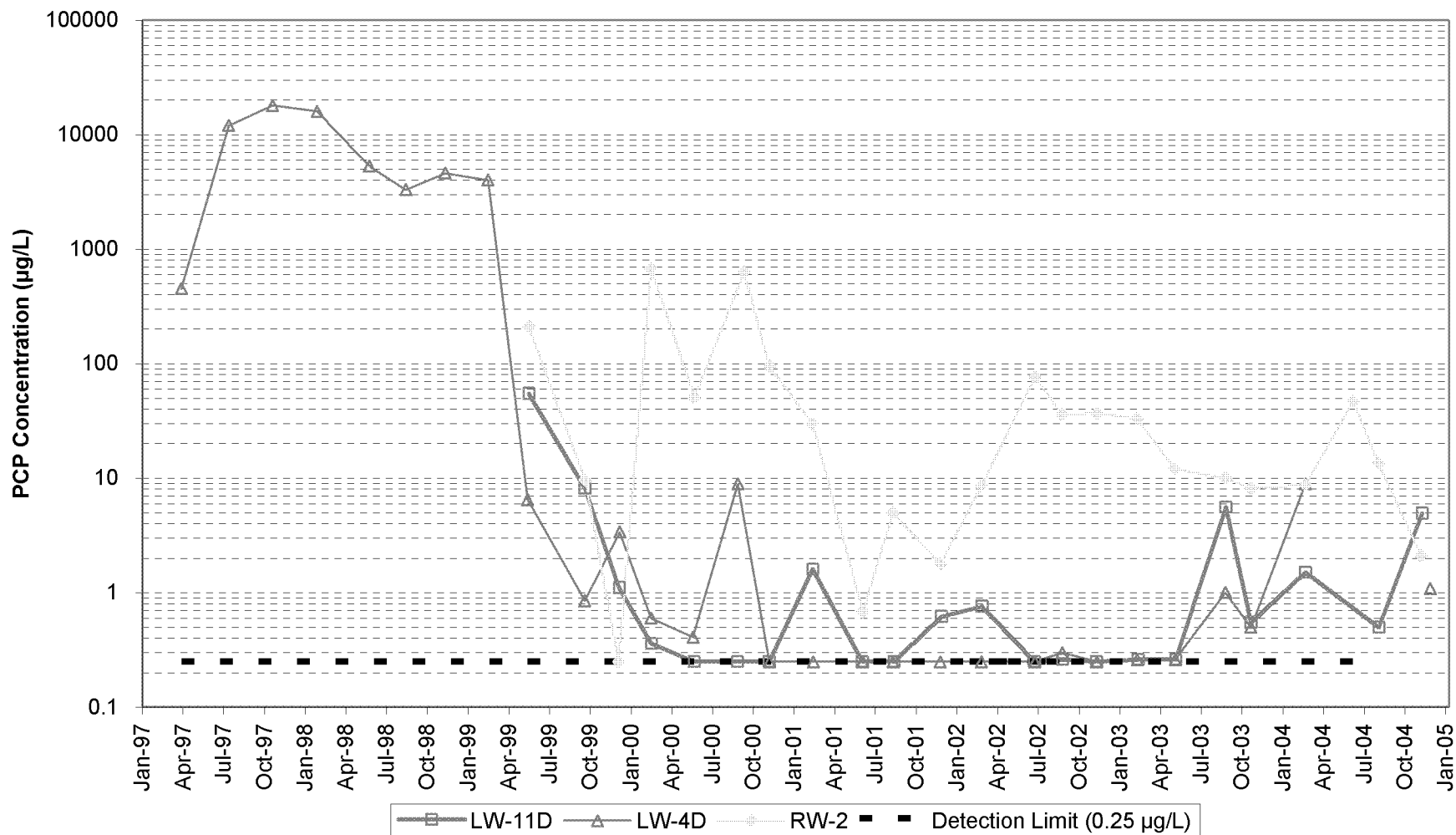
Time Oil NW Terminal
Portland, Oregon

Diesel-Range TPH vs. Groundwater Elevation
LW-30S and LW-30D
Bell Terminal

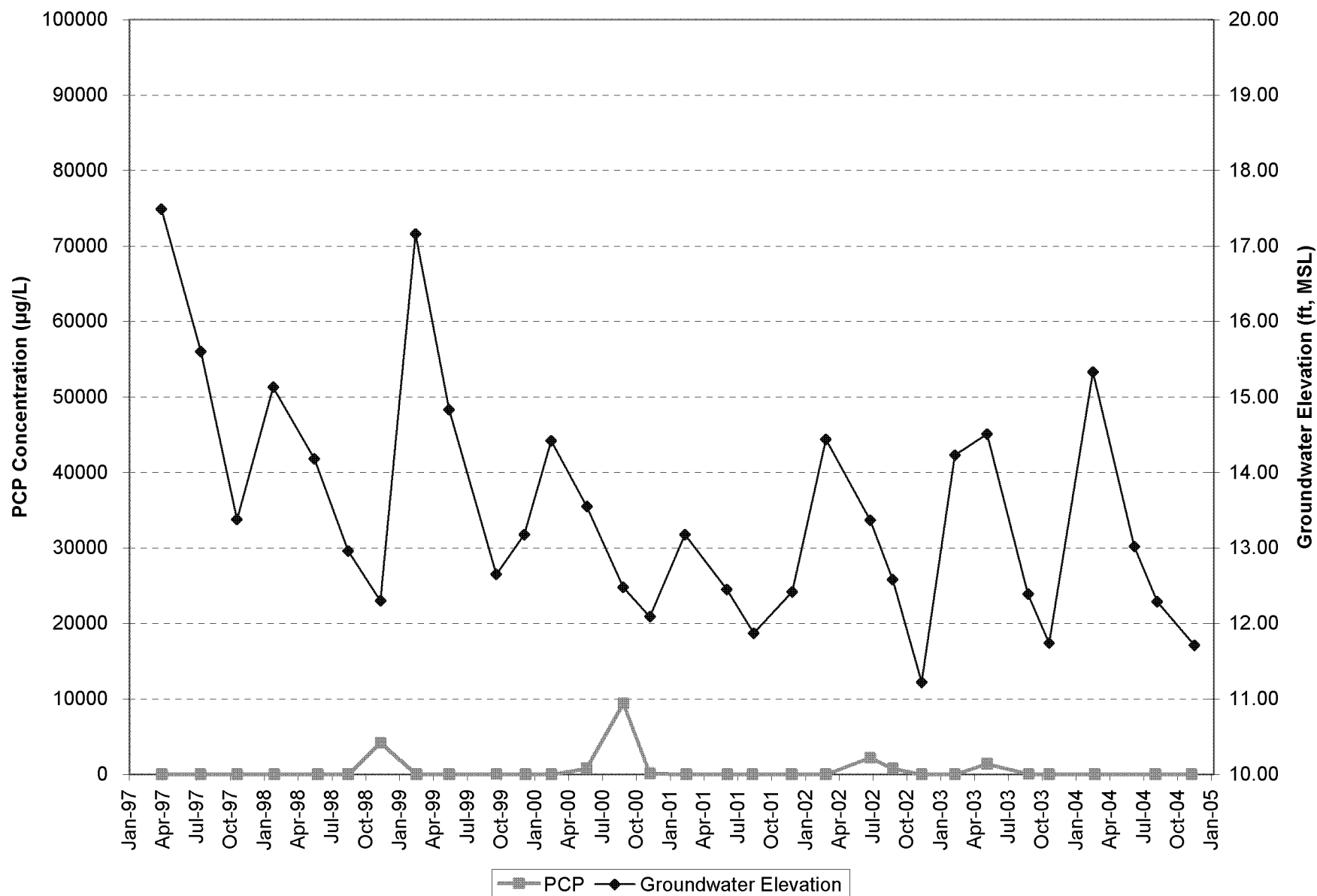
Figure
7-60







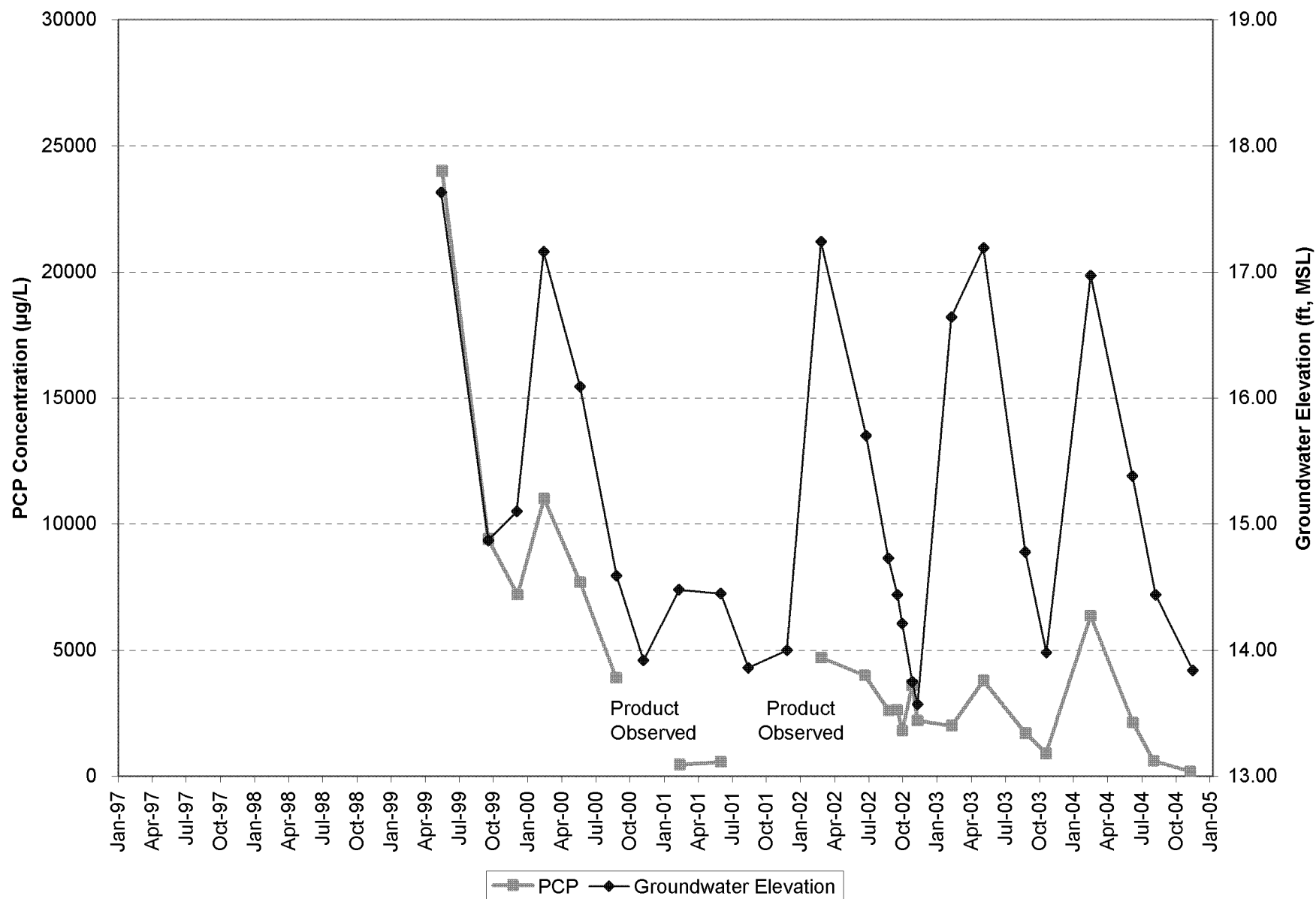
Note: LW-4DR was installed 11/19/04 to replace the damaged LW-4D.

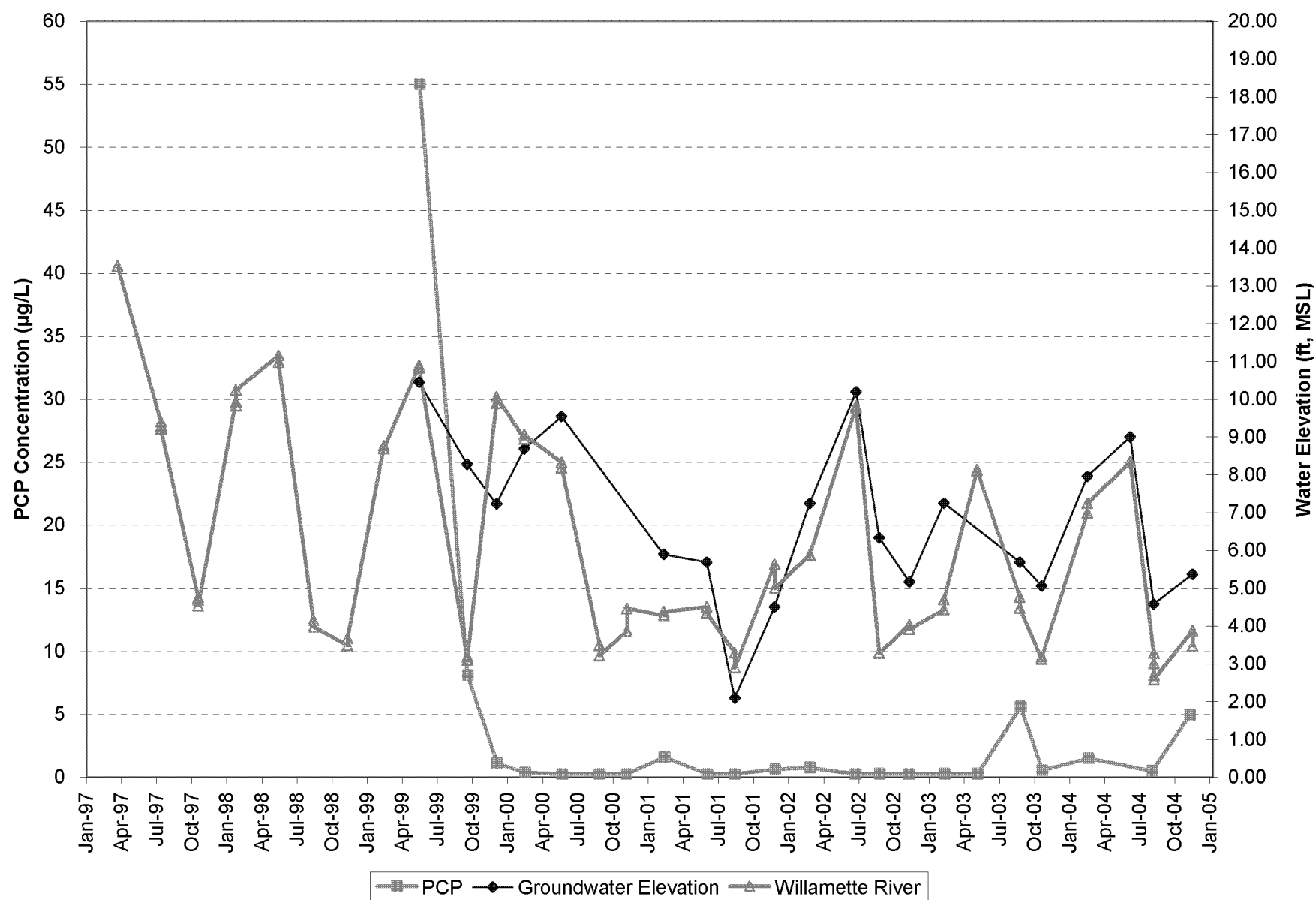


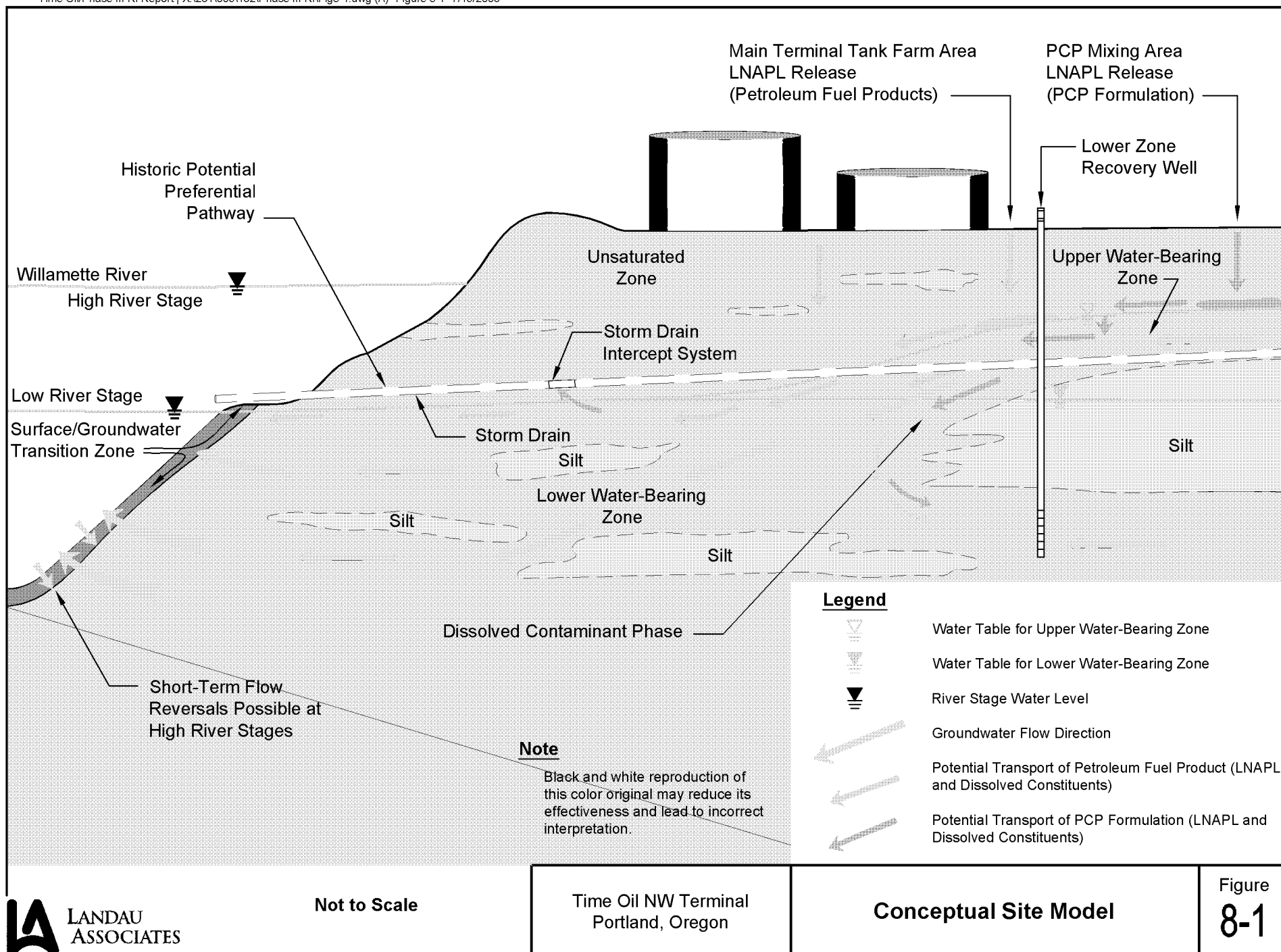
Time Oil NW Terminal
Portland, Oregon

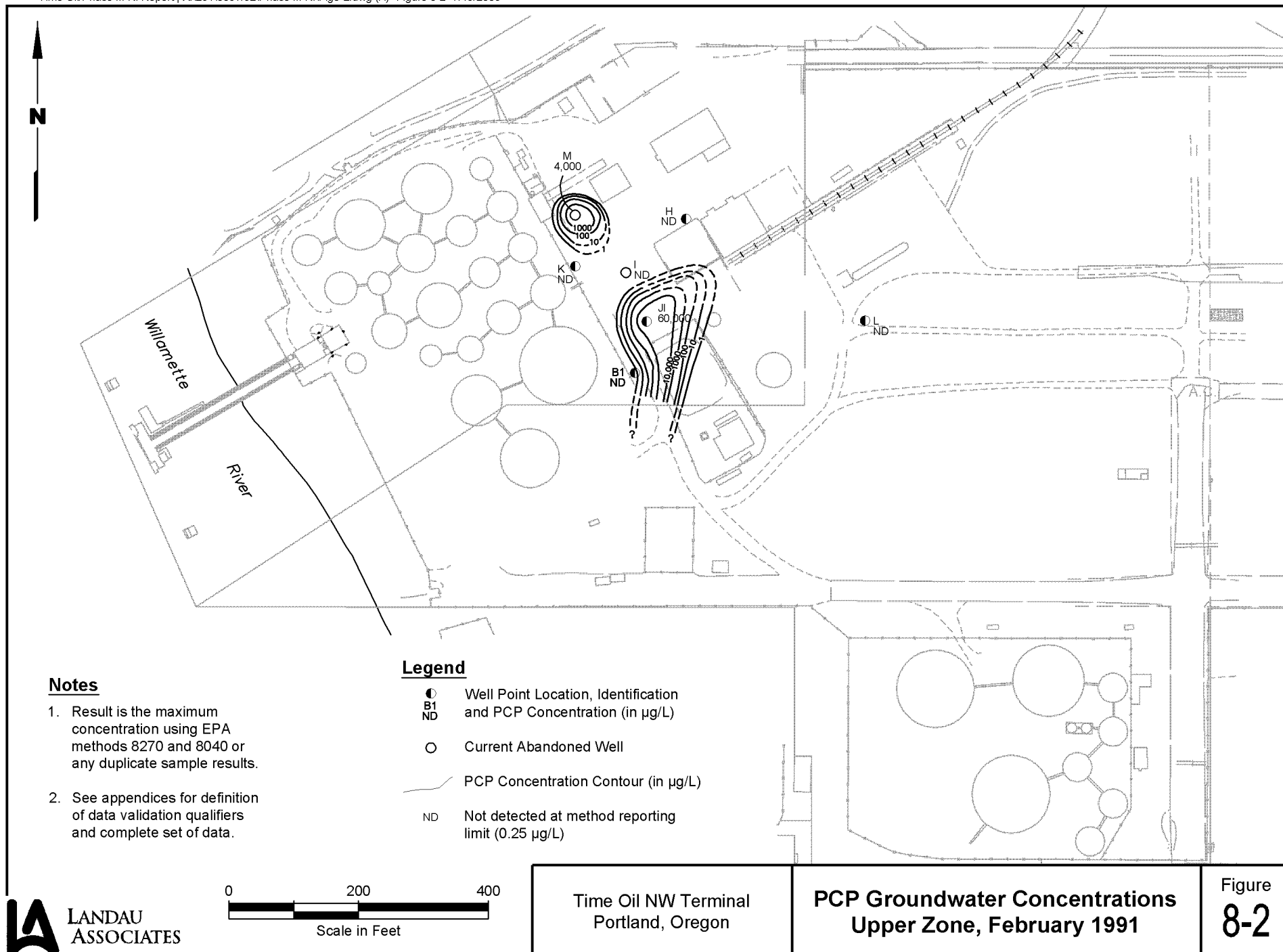
**PCP Concentrations and Groundwater
Elevations, LW-4S
April 1997 – November 2004**

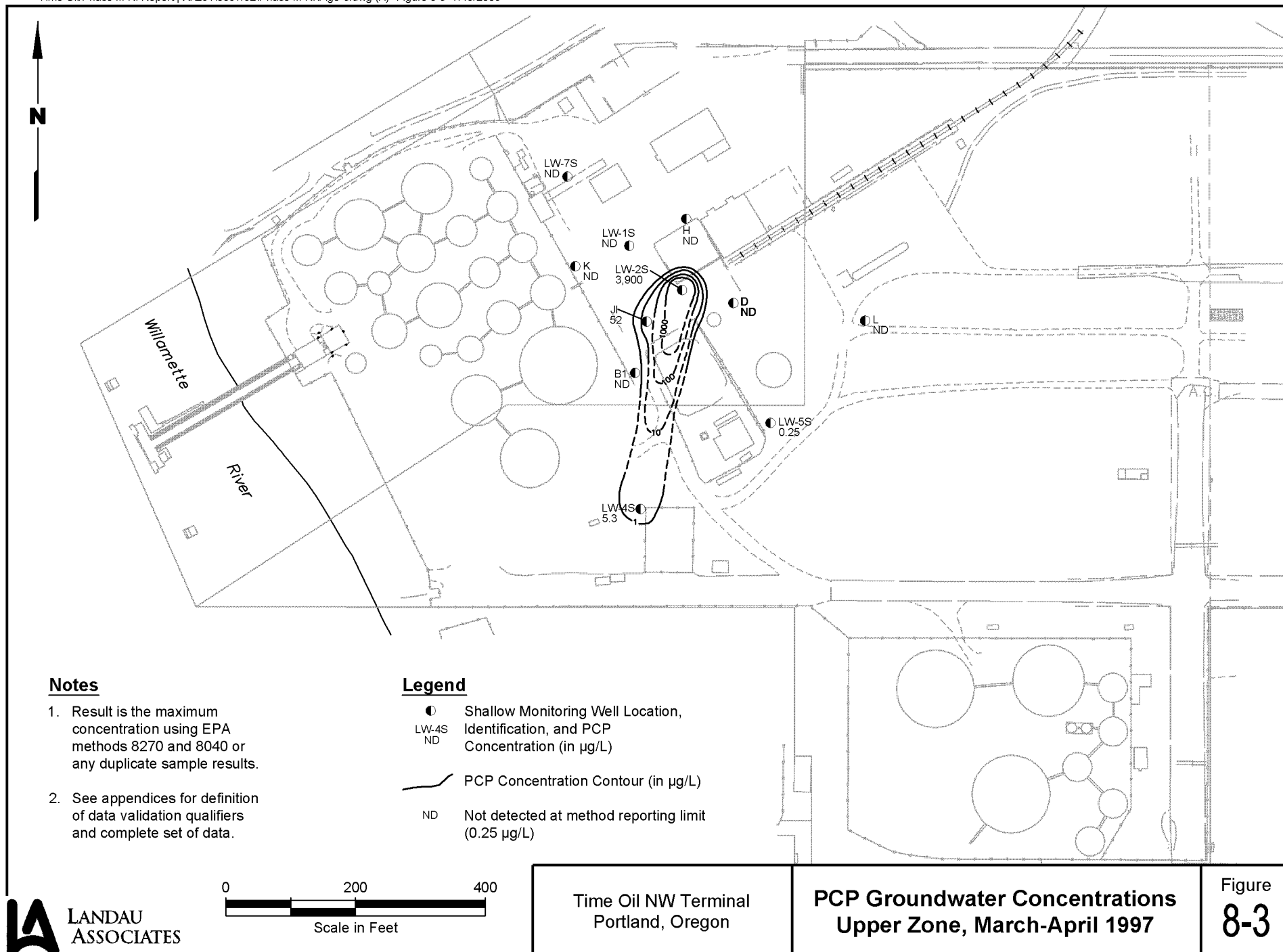
Figure
7-64

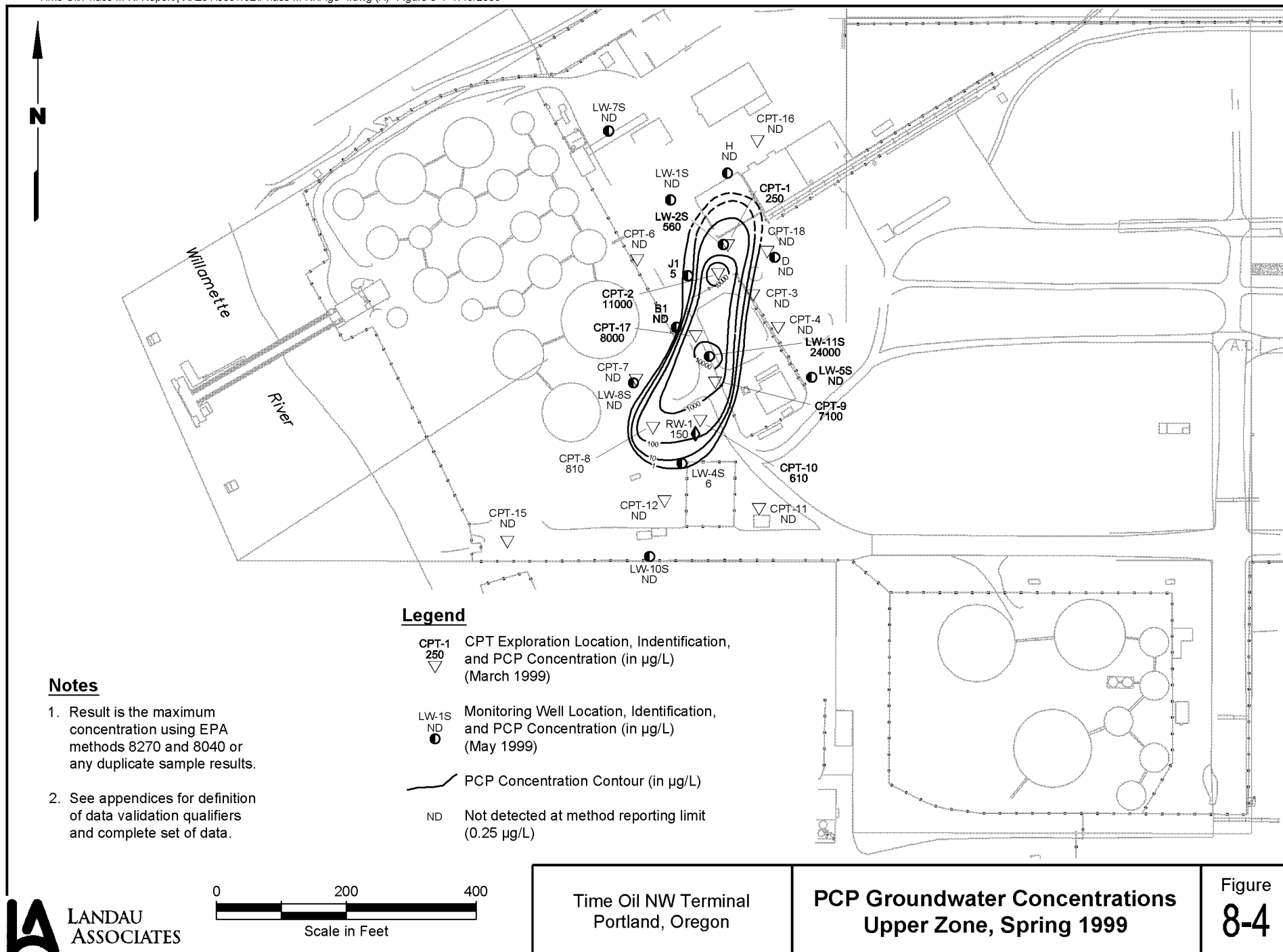


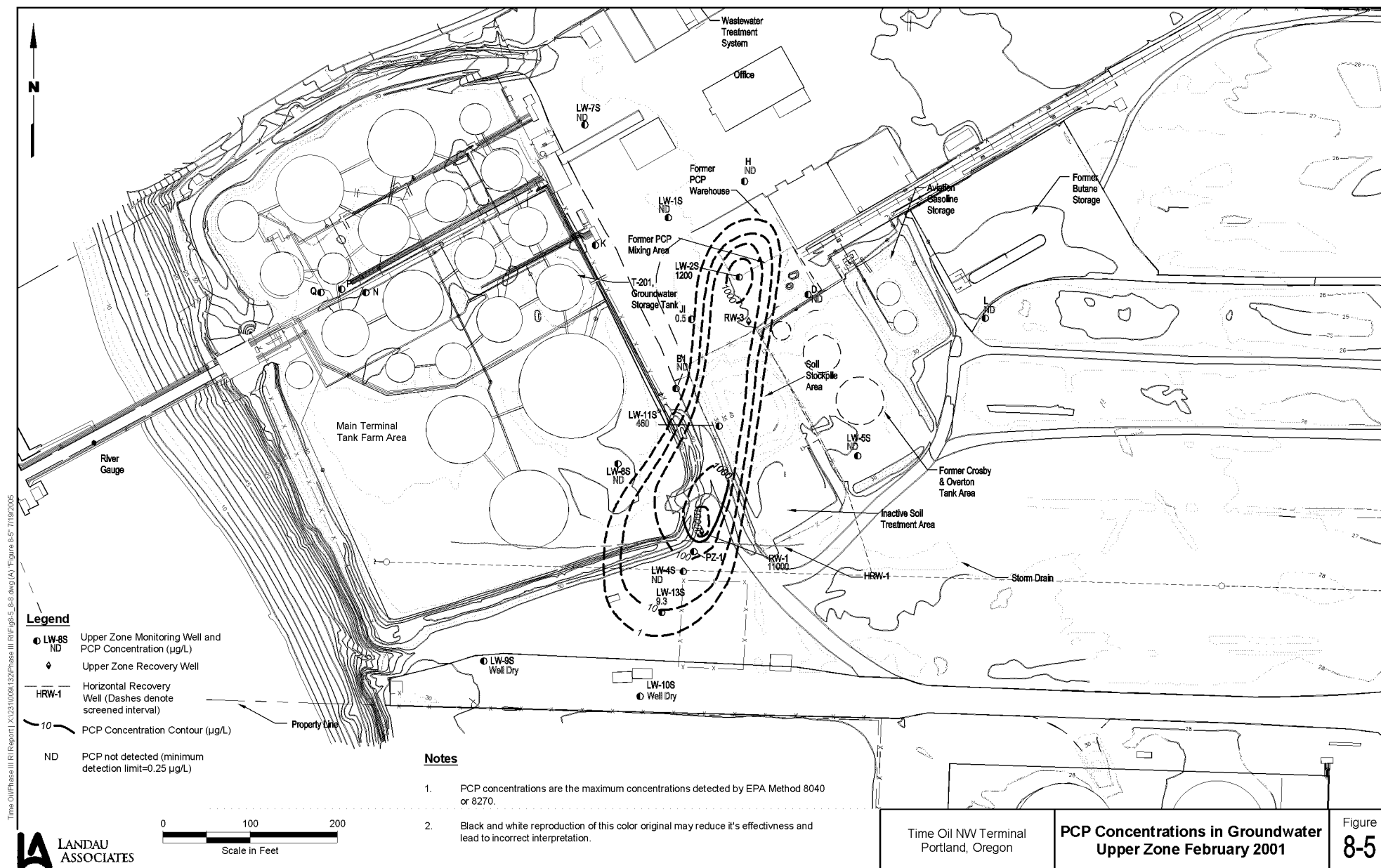


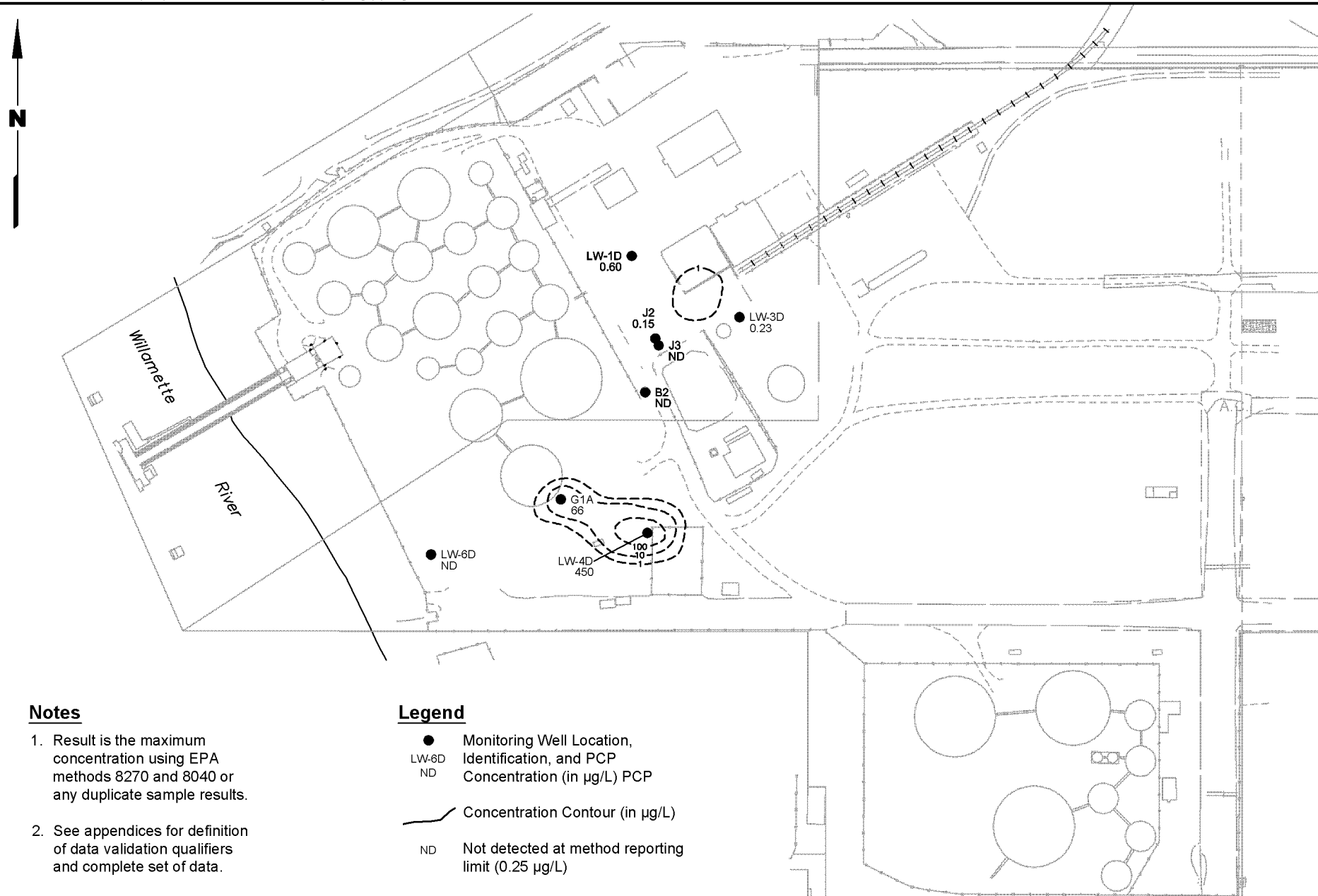








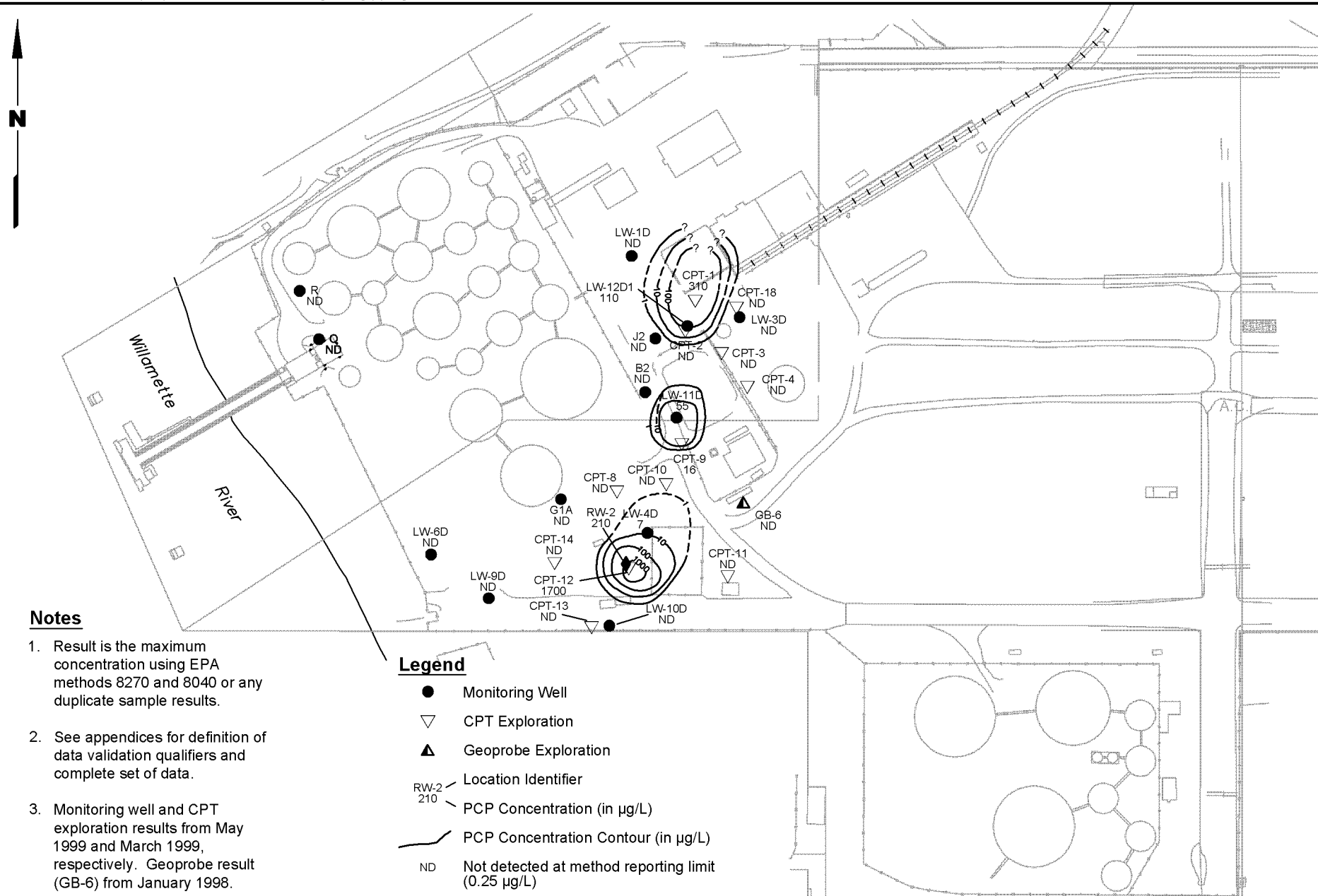




Time Oil NW Terminal
Portland, Oregon

**PCP Groundwater Concentrations
Lower Zone, March-April 1997**

Figure
8-6



Time Oil NW Terminal
Portland, Oregon

**PCP Groundwater Concentrations
Lower Zone, Spring 1999**

Figure
8-7

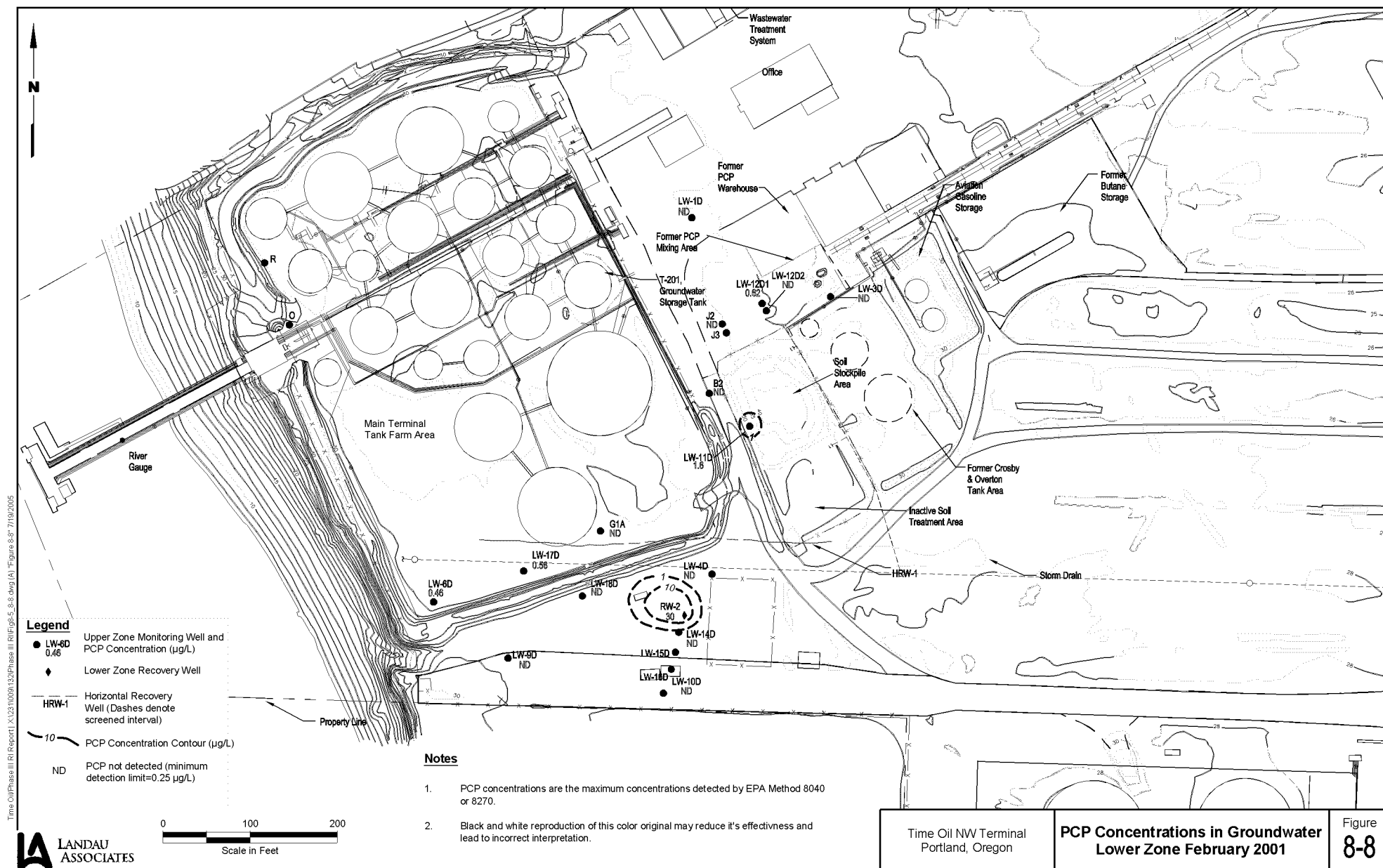


TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
B1	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X	X		X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99 (a,b)	X			X		X	X			X			X		X			X
	February-00	X			X		X	X			X			X	X	X			X
	May-00	X			X		X	X	X	X	X			X		X			X
	August-00	X			X		X	X	X	X	X			X		X			X
	November-00	X			X		X	X	X	X	X			X		X			X
	February-01	X			X		X	X	X	X	X			X	X	X			X
	June-01	X			X		X		X	X	X			X		X			
	August-01	X			X		X		X	X	X			X		X			
	November-01	X			X		X		X	X	X			X		X			
	February-02	X			X		X		X	X	X			X	X	X			
	June-02	X			X		X		X	X	X			X		X			
	August-02	X			X		X		X	X	X			X		X			
	November-02	X			X		X		X	X	X			X		X			
	February-03	X			X		X		X	X	X			X	X	X			
	May-03	X			X		X		X	X	X			X		X			
	August-03	X			X		X		X	X	X			X		X			
	October-03	X			X		X		X	X	X			X		X			
	February-04	X			X		X		X	X	X			X		X			
	August-04	X			X		X		X	X	X			X		X			
B2	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X				X			X		X			
	August-01	X			X		X				X			X		X			
	November-01	X			X		X				X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X				X			X		X			
	August-02	X			X		X				X			X		X			
	November-02	X			X		X				X			X		X			
	February-03	X			X		X	X			X			X	X	X			
	May-03	X			X		X				X			X		X			

BZTO104(e)022960

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	August-03	X			X		X				X			X		X			
	October-03	X			X		X				X			X		X			
	February-04	X			X		X				X			X		X			
	August-04	X			X		X				X			X		X			
D	April-97	X			X		X	X			X			X	X		X		
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X		X		
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99 (b)	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X				X			X		X			
	August-01	X			X		X				X			X		X			
	November-01	X			X		X				X			X		X			
	February-02	X			X		X				X			X	X	X			
	June-02	X			X		X				X			X		X			
	August-02	X			X		X				X			X		X			
	November-02	X			X		X				X			X		X			
	February-03	X			X		X				X			X	X	X			
	May-03	X			X		X				X			X		X			
	August-03	X			X		X				X			X		X			
	October-03	X			X		X				X			X		X			
	February-04	X			X		X				X			X		X			
	August-04	X			X		X				X			X		X			
J1	April-97	X			X		X	X			X			X	X			X	
	July-97	X			X		X	X			X			X	X			X	
	October-97	X			X		X	X			X			X	X			X	
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X		X	
	August-98	X			X		X	X			X			X		X		X	
	November-98	X			X		X	X			X			X		X		X	
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X	X	X		X	
	September-99	X			X		X	X			X			X		X			
	December-99 (a,b)	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X				X			X		X			
	August-01	X			X		X				X			X		X			
	November-01	X			X		X				X			X		X			
	February-02	X			X		X				X			X	X	X			

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	June-02	X			X		X				X			X		X			
	August-02	X			X		X				X			X		X			
	November-02	X			X		X				X			X		X			
	February-03	X			X		X				X			X	X	X			
	May-03	X			X		X				X			X		X			
	August-03	X			X		X				X			X		X			
	October-03	X			X		X				X			X		X			
	February-04	X			X		X				X			X		X			
	August-04	X			X		X				X			X		X			
J2	April-97														X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X				X			X		X			
	August-01	X			X		X				X			X		X			
	November-01	X			X		X				X			X		X			
	February-02	X			X		X				X			X	X	X			
	June-02	X			X		X				X			X		X			
	August-02	X			X		X				X			X		X			
	November-02	X			X		X				X			X		X			
	February-03	X			X		X				X			X	X	X			
	May-03	X			X		X				X			X		X			
	August-03	X			X		X				X			X		X			
	October-03	X			X		X				X			X		X			
	February-04	X			X		X				X			X		X			
	August-04	X			X		X				X			X		X			
J3	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			

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TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
G1A	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		x			
	February-99	X	X		X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	August-02	X			X		X	X			X			X		X			
	November-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X	X	X			
	May-03	X			X		X	X			X			X		X			
	August-03	X			X		X	X			X			X		X			
	October-03	X			X		X		X		X			X		X			
	February-04	X			X		X		X		X			X		X			
	June-04	X			X		X		X		X			X		X			
	August-04	X			X		X		X		X			X		X			
	November-04	X			X		X		X		X			X		X			
H	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98						X				X								
	August-98						X				X								
	November-98						X				X								
	February-99						X				X								
	May-99						X				X								
	September-99						X				X								
	December-99						X				X								
	February-00						X				X								
	May-00						X				X								
	February-01						X				X								
	February-02						X				X								
	February-03						X				X								
K	April-97	X			X		X	X			X			X					
	July-97	X			X		X	X			X			X					
	October-97	X			X		X	X			X			X					
	January-98	X			X		X	X			X			X					
	May-98										X								
	August-98										X								

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	November-98										X								
	February-99										X								
	May-99										X								
	September-99										X								
	December-99										X								
	February-00										X								
	May-00										X								
	August-00										X								
	November-00										X								
	February-01										X								
	June-01										X								
	August-01										X								
	November-01										X								
	February-02										X								
	June-02										X								
	August-02										X								
	November-02										X								
	February-03										X								
	May-03										X								
	August-03										X								
	October-03			X	X					X	X								
	February-04				BTEX					X									
	June-04				BTEX					X									
	August-04				BTEX					X									
	November-04				BTEX					X									
L	April-97	X			X		X				X			X	X				
	July-97	X			X		X				X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	February-02	X			X		X	X			X			X	X	X			
O	April-97	X			X														
	July-97	X			X									X					
	October-97	X			X														
	January-98	X			X														
	May-98	X			X														
	August-98	X			X														
	November-98	X			X														
	February-99	X			X														
	May-99	X			X														
	September-99	X			X														
	December-99	X			X														
	February-00	X			X														
	May-00	X			X														

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	August-00	X			X														
	November-00	X			X														
	February-01	X			X														
	June-01	X			X														
	August-01	X			X														
	November-01	X			X														
	February-02	X			X														
	June-02	X			X														
	August-02	X			X														
	November-02	X			X														
	February-03	X			X														
	May-03	X			X														
	August-03	X			X														
	October-03	X			X														
R	April-97	X			X														
	July-97	X			X									X					
	October-97	X			X														
	January-98	X			X														
	May-98	X			X														
	August-98	X			X														
	November-98	X			X														
	February-99	X			X														
	May-99	X			X														
	September-99	X			X														
	December-99	X			X														
	February-00	X			X														
	May-00	X			X														
	August-00	X			X														
	November-00	X			X														
	February-01	X			X														
	June-01	X			X														
	August-01	X			X														
	November-01	X			X														
	February-02	X			X														
	June-02	X			X														
	August-02	X			X														
	November-02	X			X														
	February-03	X			X														
	May-03	X			X														
	August-03	X			X														
	October-03	X			X														
LW1D	April-97	X			X		X				X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X				X			X		X			
	August-01	X			X		X				X			X		X			
	November-01	X			X		X				X			X		X			
	February-02	X			X		X				X			X	X	X			
	June-02	X			X		X				X			X		X			
	August-02	X			X		X				X			X		X			
	November-02	X			X		X				X			X		X			
	February-03	X			X		X				X			X	X	X			
	May-03	X			X		X				X			X		X			
	August-03	X			X		X				X			X		X			
	October-03	X			X		X				X			X		X			
LW1S	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X				X			X		X			
	August-01	X			X		X				X			X		X			
	November-01	X			X		X				X			X		X			
	February-02	X			X		X				X			X	X	X			
	June-02	X			X		X				X			X		X			
	August-02	X			X		X				X			X		X			
	November-02	X			X		X				X			X		X			
	February-03	X			X		X				X			X	X	X			
	May-03	X			X		X				X			X		X			
	August-03	X			X		X				X			X		X			
	October-03	X		X	X		X			X	X			X		X			
	February-04				BTEX					X									
	June-04				BTEX					X									
	August-04				BTEX					X									
	November-04				X														
LW2S*	April-97	X			X		X	X			X			X	X			X	
	July-97	X			X		X	X			X			X				X	
	October-97	X			X		X	X			X			X	X			X	
	January-98	X			X		X	X			X			X	X			X	
	May-98	X			X		X	X			X			X		X		X	
	August-98	X			X		X	X			X			X		X		X	
	November-98	X			X		X	X			X			X		X		X	

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	February-99	X	X		X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X	X	X		X	
	September-99	X			X		X	X			X			X		X		X	
	December-99 (a,b)	X			X		X	X			X			X		X		X	
	February-00	X			X		X	X			X			X	X	X		X	
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
LW3D	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X				X			X		X			
	August-01	X			X		X				X			X		X			
	November-01	X			X		X				X			X		X			
	February-02	X			X		X				X			X	X	X			
	June-02	X			X		X				X			X		X			
	August-02	X			X		X				X			X		X			
	November-02	X			X		X				X			X		X			
	February-03	X			X		X				X			X	X	X			
	May-03	X			X		X				X			X		X			
	August-03	X			X		X				X			X		X			
	October-03	X			X		X				X			X		X			
	February-04	X			X		X				X			X		X			
	August-04	X			X		X				X			X		X			

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TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
LW4D	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X			X	
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X		X	
	November-98	X			X		X	X			X			X		X		X	
	February-99	X	X		X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X		X	
	September-99	X			X		X	X			X			X		X		X	
	December-99	X			X		X	X			X			X		X		X	
	February-00	X			X		X	X			X			X	X	X		X	
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	August-02	X			X		X	X			X			X		X			
	November-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X	X	X			
	May-03	X			X		X	X			X			X		X			
	August-03	X			X		X	X			X			X		X			
	October-03	X			X		X		X		X			X		X			
	February-04	X			X		X		X		X			X		X			
LW4DR	November-04	X			X		X		X		X			X		X			
LW4S	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	August-02	X			X		X	X			X			X		X			
	November-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X	X	X			
	May-03	X			X		X	X			X			X		X			

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	August-03	X			X		X	X			X			X		X			
	October-03	X			X		X		X		X			X		X			
	February-04	X			X		X	X			X			X		X			
	August-04	X			X		X	X			X			X		X			
	November-04	X			X		X	X			X			X		X			
LW5S	April-97	X			X		X	X			X			X	X		X		
	July-97	X			X		X	X			X			X	X		X		
	October-97	X			X		X	X			X			X	X		X		
	January-98	X			X		X	X			X			X	X		X		
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X		X			
	June-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X		X			
LW6D	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X			X	
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X			X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	August-02	X			X		X	X			X			X		X			
	November-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X	X	X			
	May-03	X			X		X	X			X			X		X			
	August-03	X			X		X	X			X			X		X			
	October-03	X			X		X		X		X			X		X			
	February-04	X			X		X		X		X			X		X			
	June-04	X			X		X		X		X			X		X			
	August-04	X			X		X		X		X			X		X			
	November-04	X			X		X		X		X			X		X			

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
LW7S	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X			X	X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98	X			X		X	X			X			X		X			
	August-98	X			X		X	X			X			X		X			
	November-98	X			X		X	X			X			X		X			
	February-99	X	X		X		X	X			X			X	X	X			
	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	August-02	X			X		X	X			X			X		X			
	November-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X	X	X			
	May-03	X			X		X	X			X			X		X			
	August-03	X			X		X	X			X			X		X			
	October-03	X		X	X		X		X	X	X			X		X			
	February-04	X		X	X	X	X		X	X	X			X		X			
	June-04	X		X	X	X	X		X	X	X								
	August-04	X		X	X	X	X		X	X	X			X		X			
	November-04	X		X	X	X	X		X	X	X			X		X			
LW8S	May-99	X			X		X	X	X	X	X			X		X			
	September-99	X			X		X	X	X	X	X			X		X			
	December-99 (a,b)	X			X		X	X	X	X	X			X		X			
	February-00	X			X		X	X	X	X	X			X	X	X			
	May-00	X			X		X	X	X	X	X			X		X			X
	August-00	X			X		X	X	X	X	X			X		X			X
	November-00	X			X		X	X	X	X	X			X		X			X
	February-01	X			X		X	X	X	X	X			X	X	X			X
	June-01	X			X		X	X	X	X	X			X		X			
	August-01	X			X		X	X	X	X	X			X		X			
	November-01	X			X		X	X	X	X	X			X		X			
	February-02	X			X		X	X	X	X	X			X	X	X			
	June-02	X			X		X	X	X	X	X			X		X			
	August-02	X			X		X	X	X	X	X			X		X			
	November-02	X			X		X	X	X	X	X			X		X			
	February-03	X			X		X	X	X	X	X			X	X	X			
	May-03	X			X		X	X	X	X	X			X		X			
	August-03	X			X		X	X	X	X	X			X		X			
	October-03	X			X		X		X	X	X			X		X			
	February-04	X			X		X		X	X	X			X		X			
	June-04	X			X		X		X	X	X								
	August-04	X			X		X		X	X	X			X		X			
	November-04	X			X		X		X	X	X			X		X			

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
LW9S	May-99	X			X		X	X			X			X		X			
LW9D	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	August-02	X			X		X	X			X			X		X			
	November-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X	X	X			
	May-03	X			X		X	X			X			X		X			
	August-03	X			X		X	X			X			X		X			
	October-03	X			X		X		X		X			X		X			
	February-04	X			X		X		X		X			X		X			
	June-04	X			X		X		X		X			X		X			
	August-04	X			X		X		X		X			X		X			
	November-04	X			X		X		X		X			X		X			
LW10S	May-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X	X	X			
	May-03	X			X		X	X			X			X		X			
	October-03	X			X		X		X		X			X		X			
	February-04	X			X		X		X		X			X		X			
	June-04						X												
LW10D	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	August-02	X			X		X	X			X			X		X			
	November-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X	X	X			

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TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	May-03	X			X		X	X			X			X		X			
	August-03	X			X		X	X			X			X		X			
	October-03	X			X		X		X		X			X		X			
	February-04	X			X		X		X		X			X		X			
	June-04	X			X		X		X		X			X		X			
	August-04	X			X		X		X		X			X		X			
	November-04	X			X		X		X		X			X		X			
LW11S	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X		X	
	December-99 (a,b)	X			X		X	X			X			X		X		X	
	February-00	X			X		X	X			X			X	X	X		X	X
	May-00	X			X		X	X	X	X	X			X		X			X
	August-00	X			X		X	X	X	X	X			X		X			X
	February-01	X			X		X	X	X	X	X			X	X	X			X
	June-01	X			X		X	X	X	X	X			X		X			
	February-02	X			X		X	X	X	X	X			X	X	X			
	June-02	X			X		X	X	X	X	X			X		X			
	August-02	X			X		X	X	X	X	X			X		X			
	November-02	X			X		X	X	X	X	X			X		X			
	February-03	X			X		X	X	X	X	X			X	X	X			
	May-03	X			X		X	X	X	X	X			X		X			
	August-03	X			X		X	X	X	X	X			X		X			
	October-03	X			X		X		X	X	X			X		X			
	February-04	X			X		X		X	X	X			X		X			
	June-04	X			X						X	X	X						
	August-04	X			X						X	X	X	X		X			
	November-04	X			X						X	X	X	X		X			
LW11D	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	August-02	X			X		X	X			X			X		X			
	November-02	X			X		X	X			X			X		X			
	February-03	X			X		X	X			X			X	X	X			
	May-03	X			X		X	X			X			X		X			
	August-03	X			X		X	X			X			X		X			
	October-03	X			X		X		X		X			X		X			
	February-04	X			X		X		X		X			X		X			
	August-04	X			X		X		X		X			X		X			
	November-04	X			X						X	X	X	X		X			
LW12D1*	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
LW12D2*	May-99	X			X		X	X			X			X		X			
	September-99	X			X		X	X			X			X		X			
	December-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	May-00	X			X		X	X			X			X		X			
	August-00	X			X		X	X			X			X		X			
	November-00	X			X		X	X			X			X		X			
	February-01	X			X		X	X			X			X	X	X			
	June-01	X			X		X	X			X			X		X			
	August-01	X			X		X	X			X			X		X			
	November-01	X			X		X	X			X			X		X			
	February-02	X			X		X	X			X			X	X	X			
	June-02	X			X		X	X			X			X		X			
	February-04						X												
	August-04						X												
	November-04	X			X				X		X	X	X	X		X			
LW-14D	February-04						X												
	August-04						X												
LW-16D	August-04						X												
LW-17D	February-04						X												
	August-04						X												
	November-04						X		X	X									
LW-18D	February-04						X												
	August-04						X												
	November-04						X		X	X									

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TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
RW1	May-99	X			X		X	X	X	X	X			X	X	X			
	September-99	X			X		X	X	X	X	X			X		X			
	December-99	X			X		X	X	X	X	X			X		X			
	February-00	X			X		X	X	X	X	X			X	X	X			X
	May-00	X			X		X	X	X	X	X			X		X			X
	August-00	X			X		X	X	X	X	X			X		X			X
	November-00	X			X		X	X	X	X	X			X		X			X
	February-01	X			X		X	X	X	X	X			X	X	X			X
	June-01	X			X		X	X	X	X	X			X		X			
	August-01	X			X		X	X	X	X	X			X		X			
	November-01	X			X		X	X	X	X	X			X		X			
	February-02	X			X		X	X	X	X	X			X	X	X			
	June-02	X			X		X	X	X	X	X			X		X			
	August-02	X			X		X	X	X	X	X			X		X			
	November-02	X			X		X	X	X	X	X			X		X			
	February-03	X			X		X	X	X	X	X			X	X	X			
	May-03	X			X		X	X	X	X	X			X		X			
	August-03	X			X		X	X	X	X	X			X		X			
	October-03	X			X		X		X	X	X			X		X			
	February-04	X			X		X		X	X	X			X		X			
RW2	June-04	X			X						X	X	X					X	
	August-04	X			X		X		X	X	X	X	X	X		X		X	
	November-04	X			X						X	X	X	X		X		X	
	May-99	X			X		X	X	X	X	X			X	X	X			
	September-99	X			X		X	X	X	X	X			X		X			
	December-99	X			X		X	X	X	X	X			X		X			
	February-00	X			X		X	X	X	X	X			X	X	X			
	May-00	X			X		X	X	X	X	X			X		X			
	August-00	X			X		X	X	X	X	X			X		X			
	November-00	X			X		X	X	X	X	X			X		X			
	February-01	X			X		X	X	X	X	X			X	X	X			
	June-01	X			X		X	X	X	X	X			X		X			
	August-01	X			X		X	X	X	X	X			X		X			
	November-01	X			X		X	X	X	X	X			X		X			
	February-02	X			X		X	X	X	X	X			X	X	X			
	June-02	X			X		X	X	X	X	X			X		X			
	August-02	X			X		X	X	X	X	X			X		X			
	November-02	X			X		X	X	X	X	X			X		X			
	February-03	X			X		X	X	X	X	X			X	X	X			
	May-03	X			X		X	X	X	X	X			X		X			
	August-03	X			X		X	X	X	X	X			X		X			
	October-03	X			X		X		X	X	X			X		X			
	February-04	X			X		X		X	X	X			X		X			
RW3*	June-04	X			X		X		X	X	X			X		X			
	August-04	X			X		X		X	X	X			X		X			
	November-04	X			X		X		X	X	X			X		X			
	December-99 (b)	X			X		X	X	X	X	X			X	X	X			X
LW101S*	April-97	X			X		X	X			X			X	X			X	
	July-97	X			X		X	X			X			X	X			X	
	October-97	X			X		X	X			X			X	X			X	
	January-98	X			X		X	X			X			X	X			X	
	May-98																		

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TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
	August-98																		
	November-98																		
	February-99		X								X								
	May-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	February-01	X			X		X	X			X			X	X	X			
	February-02	X			X		X	X			X			X	X	X			
	February-03	X			X		X	X			X			X	X	X			
LW102S*	April-97	X			X		X	X			X			X	X			X	
	July-97	X			X		X	X			X			X	X			X	
	October-97	X			X		X	X			X			X	X			X	
	January-98	X			X		X	X			X			X	X			X	
	May-98										X								
	August-98																		
	November-98																		
	February-99										X								
	May-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	February-01	X			X		X	X			X			X	X	X			
	February-02	X			X		X	X			X			X	X	X			
	February-03	X			X		X	X			X			X	X	X			
LW103S*	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X				X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98										X								
	August-98																		
	November-98																		
	February-99										X								
	May-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	February-01	X			X		X	X			X			X	X	X			
	February-02	X			X		X	X			X			X	X	X			
	February-03	X			X		X	X			X			X	X	X			
LW104S*	April-97	X			X		X	X			X			X	X				
	July-97	X			X		X	X			X				X				
	October-97	X			X		X	X			X			X	X				
	January-98	X			X		X	X			X			X	X				
	May-98										X								
	August-98																		
	November-98																		
	February-99										X								
	May-99	X			X		X	X			X			X		X			
	February-00	X			X		X	X			X			X	X	X			
	February-01	X			X		X	X			X			X	X	X			
	February-02	X			X		X	X			X			X	X	X			
	February-03	X			X		X	X			X			X	X	X			

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TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
OX1S	June-02				X						X			X					
	February-03						X												
	May-03						X												
	August-03						X												
	October-03						X												
	February-04						X												
	June-04	X			X						X	X	X						
	August-04	X			X						X	X	X						
OX2S	June-02				X						X			X					
	February-03						X												
	May-03						X												
	August-03						X												
	October-03						X												
	February-04						X												
	June-04	X			X							X	X					X	
	August-04	X			X						X							X	
OX3S	June-02				X						X			X					
	February-03						X												
	May-03						X												
	August-03						X												
	October-03						X												
	February-04						X												
	June-04	X			X						X	X	X						
	August-04	X			X						X	X	X						
OX4S	June-02				X						X			X					
	February-03						X												
	May-03						X												
	August-03						X												
	October-03						X												
	February-04						X												
	June-04	X			X						X	X	X						
	August-04	X			X						X	X	X						
OX5S	October-03						X												
	February-04						X												
	June-04	X			X						X	X	X						
	August-04	X			X						X								
	November-04	X			X						X	X	X	X		X			
OX6S	October-03						X												
	February-04						X												
	June-04	X			X						X	X	X					X	
	August-04	X			X						X							X	
	November-04	X			X						X	X	X	X		X		X	
OX7S	October-03						X												
	February-04						X												
	June-04	X			X						X	X	X						
	August-04	X			X						X	X	X						
	November-04	X			X						X	X	X	X		X			

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TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
OX8D	October-03						X												
	February-04						X												
	August-04	X			X		X				X	X	X						
	November-04	X			X						X	X	X	X		X			
OX8S	October-03						X												
	February-04						X												
	June-04	X			X						X	X	X						
	August-04	X			X						X	X	X						
	November-04	X			X						X	X	X	X		X			
OX-9S	August-04	X			X						X	X	X						
LW19S	October-03	X		X	X			X	X	X				X		X			
	February-04	X		X	X	X		X	X	X									
	June-04	X		X	X	X		X	X	X									
	August-04	X		X	X	X		X	X	X				X		X			
	November-04	X		X	X	X		X	X	X				X		X			
LW20D	October-03	X		X	X			X	X	X				X		X			
	February-04	X		X	X	X		X	X	X				X		X			
	June-04	X		X	X	X		X	X	X				X		X			
	August-04	X		X	X	X		X	X	X				X		X			
	November-04	X		X	X	X		X	X	X				X		X			
LW20S	October-03	X		X	X			X	X	X				X		X			
	February-04	X		X	X	X		X	X	X				X		X			
	June-04	X		X	X	X		X	X	X									
	August-04	X		X	X	X		X	X	X				X		X			
	November-04	X		X	X	X		X	X	X				X		X			
LW21S	October-03	X		X	X			X	X	X				X		X			
	February-04	X		X	X	X		X	X	X				X		X			
LW22D	October-03	X		X	X			X	X	X				X		X			
	February-04	X		X	X	X		X	X	X				X		X			
	June-04	X		X	X	X		X	X	X				X		X			
	August-04	X		X	X	X		X	X	X				X		X			
	November-04	X		X	X	X		X	X	X				X		X			
LW23D	October-03	X		X	X			X	X	X				X		X			
	February-04	X		X	X	X		X	X	X				X		X			
	June-04	X		X	X	X		X	X	X				X		X			
	August-04	X		X	X	X		X	X	X				X		X			
	November-04	X		X	X	X		X	X	X				X		X			
LW24D	October-03	X		X	X			X	X	X				X		X			
	February-04	X		X	X	X		X	X	X				X		X			
	June-04	X		X	X	X		X	X	X				X		X			
	August-04	X		X	X	X		X	X	X				X		X			
	November-04	X		X	X	X		X	X	X				X		X			

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TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
LW25D	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X			X		X			
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW26D	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X			X		X			
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW27D	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X			X		X			
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW27S	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X								
LW28S (c)	October-03																		
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X								
LW29D	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X			X		X			
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW29S	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X								
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW30D	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X			X		X			
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW30S	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X								
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW31S	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X								
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
LW32D	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X			X		X			
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW32S	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X				X	X	X			X		X			
	June-04	X		X	X	X			X	X	X								
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW33S (c)	October-03																		
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X								
	August-04	X		X	X	X			X	X	X			X		X			
	November-04																		
LW34S	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X								
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW35D	October-03	X		X	X				X	X	X			X		X			
	February-04	X		X	X	X			X	X	X			X		X			
	June-04	X		X	X	X			X	X	X			X		X			
	August-04	X		X	X	X			X	X	X			X		X			
	November-04	X		X	X	X			X	X	X			X		X			
LW36D	November-04	X		X	X	X			X	X	X			X		X			
LW37D	November-04	X		X	X	X			X	X	X			X		X			
LW38D	November-04	X		X	X	X			X	X	X			X		X			
LW39D	November-04	X		X	X	X			X	X	X			X		X			
LW40S	November-04	X		X	X	X			X	X	X			X		X			
LW40D	November-04	X		X	X	X			X	X	X			X		X			
LW41S	November-04	X		X	X	X			X	X	X			X		X			
LW42S	November-04	X		X	X	X			X	X	X			X		X			
LW43S	November-04	X		X	X	X			X	X	X			X		X			
LW44S	November-04	X		X	X	X			X	X	X			X		X			
LW45D	November-04	X		X	X	X			X	X	X			X		X			
N	August-04	X		X	X	X			X	X	X			X		X			

TABLE 2-1
SUMMARY OF QUARTERLY GROUNDWATER ANALYSES
TIME OIL NORTHWEST TERMINAL

Well	Sampling Date	SVOC 8270	SVOC SIM	PAH (8270 SIM)	VOC 8260	MTBE 8260	PCP 8040/8270	TPH-D	TPH-Dx	TPH-Gx	PP Metals 6010/7000	Ferrous Iron (MS3500)	Selenium (6010)	TDS	Major Ions	Chloride	PCBs 8081	Dioxin/Furans	Ethanol
Q	August-04	X		X	X	X			X	X	X			X		X			
HRW-1	February-04						X												
	June-04						X												
	August-04						X												
	November-04						X												
SDM-1	August-04						X												
	November-04						X												
River Outfall	August-04						X												

(a) In addition to the quarterly groundwater sampling, additional groundwater samples were taken on 11/1/99 and analyzed for chlorinated phenols, BTEX, and ethanol.

(b) In addition to the quarterly groundwater sampling, additional groundwater samples were taken on 12/8/99 and analyzed for ethanol.

(c) Monitoring wells were dry and not sampled as part of the first Phase III RI sampling event.

(*) Monitoring well location abandoned

TABLE 2-2
SUMMARY OF MODIFICATIONS TO QUARTERLY
GROUNDWATER ANALYSIS PROGRAM
TIME OIL NORTHWEST TERMINAL

- **Second Quarter 1998:**
 - Annual sampling of east property wells LW-101S, LW-102S, LW-103S, and LW-104S
 - Elimination of 2-chloroethylvinylether from the volatile analyte list
 - Reduction of the suite of metals analyses to include only arsenic, chromium, copper, lead, nickel, and zinc
 - Quarterly analysis of only metals in well K and only chlorinated phenols and metals in well H
 - Elimination of polychlorinated biphenyls (PCB) analysis
 - Annual analysis for major ions; quarterly analysis for chloride and dissolved oxygen.
- **First Quarter 1999:**
 - Analysis of polynuclear aromatic hydrocarbons (PAH) using analytical techniques that provide lower detection limits at upper zone wells LW-2S, LW-7S and LW-101S and at lower zone wells G1A, O, and LW-4D for the first quarter 1999 event only
 - Elimination of sampling at well J3.
- **Second Quarter 2000:**
 - Elimination of dioxin/furan analyses.
- **Third Quarter 2000::**
 - Reduction of sampling frequency of wells H, L, and LW-5S from quarterly to annually.
- **Second Quarter 2001:**
 - Reduction of the list of chlorinated phenols being analyzed by U.S. Environmental Protection Agency (EPA) Method 8040 to pentachlorophenol (PCP) only using EPA Method 8270 SIM
 - Reduction of the frequency of total petroleum hydrocarbon (TPH) analysis from quarterly to annually at upper zone wells J1 and LW-1S; lower zone wells B2, J2, LW-1D; and deep sand unit well LW-12D2. In addition, TPH analysis was eliminated for the following wells: upper zone wells D, L, LW-5S, LW-101S through -104S, and lower zone well LW-3D.
- **First Quarter 2004** (Landau Associates 2004; Roick 2004):
 - Elimination of eight wells from the Phase II sampling program for future events. These wells included five upper zone wells (H, K, L, LW-1S, and LW-5S), and three lower zone wells (O, R, LW-1D).
 - Reduction of the monitoring frequency for selected Phase II wells from quarterly to semiannually. These wells include: B1, B2, D, J1, J2, LW-3D, LW-4S, LW-4D, LW-11S, LW-11D, LW-13S, LW-14D, LW-17D, LW-18D, OX-1S through OX-8S, OX-8D, and RW-1. Semiannual sampling of these wells will be conducted in conjunction with the first and third quarter sampling of the Phase III wells.

TABLE 2-3
GROUNDWATER INTERMEDIATE ACTION OPERATIONAL HISTORY
UPPER AND LOWER WATER-BEARING ZONES
TIME OIL NORTHWEST TERMINAL

Monitoring Period	RW-2 Discharge				HRW-1 Discharge				SDM-1 Discharge				Treatment System Discharge			Comments
	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Treated (gal)	Sample Date	Discharge PCP Concentration (µg/L)	
Fourth Quarter 2000																
October 2000	438,003			0.35									0			Mass removal calculated using November 2000 PCP concentration.
November 2000	305,601	11/9/2000	95	0.24									467,478	11/7/2000	ND (a)	
December 2000	348,720	12/20/2000	39	0.11									497,656	12/9/2000	5.89	
Quarterly Totals	1,093,324			0.70									965,134	12/29/2000	9.73	
First Quarter 2001																
January 2001	416,140	1/19/2001	38.8	0.13									239,207	1/19/2001	14.3	
February 2001	335,008	2/13/2001	30	0.08									184,192			
March 2001	332,983	3/7/2001	ND (b)	0.03									517,332	3/7/2001	ND (b)	
Quarterly Totals	1,084,111			0.25									940,731			
Second Quarter 2001																
April 2001	377,931			0.04									275,519			Mass removal calculated using May 2001 PCP concentration.
May 2001	344,252	5/22/2001	12.3	0.04									195,522	5/22/2001	5.29	
June 2001	361,846	6/4/2001	0.68	0.00									563,853			
Quarterly Totals	1,084,029			0.08									1,034,884			
Third Quarter 2001																
July 2001	351,509			0.01									559,015			Mass removal calculated using August 2001 PCP concentration.
August 2001	486,123	8/13/2001	5	0.02									66,876			
Quarterly Totals	837,632			0.03									625,891			
Fourth Quarter 2001																
October 2001	393,168	10/11/2001	ND (a)	0.01									484,158	10/11/2001	ND (a)	
November 2001	319,788			0.01									118,786	11/1 & 11/15/01	ND (a)	Mass removal calculated using December 2001 PCP concentration.
December 2001	361,058	12/6/2001	ND (c)	0.01									717,769	12/6/2001	ND (c)	
Quarterly Totals	1,074,024			0.02									1,320,713			
First Quarter 2002																
January 2002	331,224			0.02	1,812			0.01					340,688			Recovered groundwater from HRW-1 from January 22-29. Re-initiated groundwater recovery from HRW-1 on February 28.
February 2002	282,480	2/27/2002	8.6	0.02	58			0.00					437,943			HRW-1 mass removal estimates for January and February are based on the March 12 sampling event.
March 2002	260,814			0.02	40,294	3/12/2002	786	0.26					234,816			RW-2 mass removal estimates for January and March are based on February 27 sampling event.
Quarterly Totals	874,518			0.06	42,164			0.28					1,013,447			
Second Quarter 2002																
April 2002	282,089			0.19	74,996	4/5/2002	94	0.06					391,263	4/5/02	34.4	RW-2 mass removal estimates for April and May are based on June 27 sampling event.
May 2002	310,584			0.20	23,427	5/29/2002	452	0.09					247,440	4/22/02	9.33	
June 2002	272,393	6/27/2002	76	0.17	25,494	6/25/2002	410	0.09					307,810			
Quarterly Totals	875,076			0.56	123,907			0.23					946,513			
Third Quarter 2002																
July 2002	272,771			0.08	51,111			0.18					188,300	7/24/2002	2.09	
August 2002	270,746	8/27/2002	36	0.08	7								301,813	8/29/2002	9.15	HRW-1 shut down on July 24 due to dry pumping conditions and potential biofouling of the well. HRW-1 mass removal rate estimate based on June 2002 data.
September 2002	143,662			0.04	0				110,000	9/23/2002	47.0		369,469	9/23/2002	11.8	RW-2 temporarily shut down on September 25. Water being intercepted from SDM-1 and pumped to treatment system beginning on September 18.
Quarterly Totals	687,179				51,118				110,000		47.0		859,382			RW-2 mass removal rates based on August 27 sampling event. Total Volume pumped from SDM-1 estimated based on throughput of WWTP and volume recovered from RW-2. Flowmeter to be installed for SDM-1 in October 2002.
Fourth Quarter 2002																
October 2002	177,937			0.06	0				Not metered				112,129	10/9/2002	8.84	
November 2002	275,033	11/13/2002	37	0.09	0				85,157				399,747			The storage tank gauge was moved to groundwater sump SDM-1 on November 1.
December 2002	418,846			0.13	0				124,894				507,766			
Quarterly Totals	871,816			0.27	0				220,051				1,019,642			RW-2 mass removal rates based on November 13 sampling event.

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TABLE 2-3
GROUNDWATER INTERMEDIATE ACTION OPERATIONAL HISTORY
UPPER AND LOWER WATER-BEARING ZONES
TIME OIL NORTHWEST TERMINAL

Monitoring Period	RW-2 Discharge				RW-1 Discharge				SDM-1 Discharge				Treatment System Discharge			Comments
	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Treated (gal)	Sample Date	Discharge PCP Concentration (µg/L)	
First Quarter 2003																
January 2003	417,846	2/11/2003	33	0.12	0				166,863	2/13/2003	290	0.40	574,451	1/15/2003	11.6	SDM-1 mass removal rates based on February 13 sampling event.
February 2003	306,299			0.11	0				192,395			0.47	483,579			
March 2003	458,180			0.13	0				210,400			0.51	624,807			
Quarterly Totals	1,274,105			0.35	0				569,458			1.38	1,682,837			RW-2 mass removal rates based on February 11 sampling event.
Second Quarter 2003																
April 2003	445,275	5/7/2003	12	0.04	0	Not Analyzed			55,037	5/7/2003	0.93	0.00	481,816	4/9/2003	22.2	RW-2 mass removal rates based on April 8, 2003 sampling event.
May 2003	455,994			0.05	0				0			0.00	469,079			
June 2003	365,658			0.04	4,175				89,243			0.00	446,127			
Quarterly Totals	1,266,927			0.13	4,175				144,280			0.00	1,397,022			
Third Quarter 2003																
July 2003	330,738	7/28/2003	<5.0	0.01	30,104	7/28/2003	370	0.09	128,562	7/28/2003	409	0.44	441,023	7/11/2003	87.4	Multiple treatment system discharge samples collected and analyzed due to upset concentration (87.4 µg/L) reported for July 11, 2003 sampling event. Additional discharge samples in response to request from City of Portland.
														7/30/2003	8.6	
August 2003	366,307	8/27/2003	10	0.03	7,388			0.02	119,831	8/27/2003	120	0.12	397,748	8/4/2003	<5.0	HRW-1 mass removal rates based on July 28 sampling event.
														8/9/2003	<5.0	
														8/11/2003	<4.76	SDM-1 mass removal rates based on July 28 sampling event.
														8/13/2003	<4.83	
														8/18/2003	<4.75	RW-2 mass removal rates based on August 27 sampling event.
														8/20/2003	<5.16	
														8/25/2003	23.8	
														8/27/2003	36.5	
September 2003	262,403			0.02	0			0.00	87,439			0.09	479,703	8/3/2003	18.3	
														8/5/2003	19.6	
														8/9/2003	7.09	
														8/23/2003	16.9	
														9/29/2003	5.96	
Quarterly Totals	959,448			0.07	37,492			0.12	335,832			0.65	1,318,474			
Fourth Quarter 2003																
October 2003	298,092	10/23/2003	8.1	0.02					74,025	10/20/2003	43	0.03	350,921	10/6/2003	<4.75	Multiple treatment system discharge samples collected and analyzed due to upset concentration (87.4 µg/L) reported for July 11, 2003 sampling event. Additional discharge samples in response to request from City of Portland.
														10/13/2003	<4.76	
														10/20/2003	<4.94	
														10/30/2003	<5.19	
November 2003	216,630			0.01					45,472			0.02	216,711	11/3/2003	<4.73	SDM-1 mass removal rates based on October 20 sampling event.
														11/10/2003	<4.78	
														11/17/2003	<4.94	RW-2 mass removal rates based on October 23 sampling event.
														11/21/2003	<4.79	
December 2003	367,462			0.02					85,504			0.03	488,055	12/1/2003	<4.79	
														12/15/2003	<4.92	
														12/29/2003	30.4	
Quarterly Totals	882,184			0.06					215,007			0.08	1,055,687			
First Quarter 2004																
January 2004	348,926	2/23/2004	8.69	0.03					141,282	2/23/2004	791	0.93	387,831	1/15/2004	32.1	
														1/23/2004	45.7	
														1/28/2004	31.9	
February 2004	267,885			0.02					197,525			1.31	321,085	2/19/2004	57.2	
March 2004	246,667			0.02					17,825			0.12	197,621	3/2/2004	112	Multiple treatment system discharge samples collected due to upset
														3/4/2004	49.5	
														3/18/2004	113	
														3/19/2004	85.9	
														3/24/2004	6.23	
														3/28/2004	7.07	
Quarterly Totals	863,258			0.06					356,632			2.36	886,537			

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TABLE 2-3
GROUNDWATER INTERIM ACTION OPERATIONAL HISTORY
UPPER AND LOWER WATER-BEARING ZONES
TIME OIL NORTHWEST TERMINAL

Monitoring Period	RW-2 Discharge				HRW-1 Discharge				SDM-1 Discharge				Treatment System Discharge			Comments
	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Pumped (gal)	Sample Date	PCP Concentration (µg/L)	Estimated PCP Mass Removal (lb)	Volume of Water Treated (gal)	Sample Date	Discharge PCP Concentration (µg/L)	
Second Quarter 2004																SDM-1 flow meter replaced May 28, 2004
April 2004	190,512	6/9/2004	47.3	0.08	0	6/9/2004	278	0.00					315,554	4/22/2004	194	
May 2004	87,481			0.03	3,824			0.01	146	6/9/2004	595	0.001	242,530	5/19/2004 5/27/2004	39.3 5.81	
June 2004	168,815			0.07	6,881			0.02	44,155			0.22	263,730	6/3/2004 6/8/2004 6/15/2004	ND 7.55 8.78	
Quarterly Totals	446,608			0.18	10,305			0.02	44,301			0.22	821,814			
Third Quarter 2004																
July 2004	210,710	8/5/2004	13.5	0.02	0	8/5/2004	18.6	0.00	58,581	8/5/2004	158	0.08	343,028	7/7/2004	37.5	
August 2004	298,000			0.03	1,700			0.0002	56,800			0.08	667,180	8/10/2004	ND	
September 2004	329,619			0.04	719			0.0001	36,500			0.05	348,620	9/17/2004 8/30/2004	ND ND	
Quarterly Totals	839,329			0.09	2,419			0.00	151,961			0.20	1,358,828			
Fourth Quarter 2004																
October 2004	226,975	11/9/2004	2.12	0.004	62	11/11/2004	ND (d)	0	30,347	11/11/2004	1.61	0.0004	137,056			
November 2004	280,700			0.01	0			0.0000	42,400			0.001	395,562	11/10/2004 11/19/2004	ND ND	
December 2004	381,500			0.01	1,200			0	65,000			0.001	470,334	12/17/2004	6.92	
Quarterly Totals	909,175			0.02	1,262			0.00	137,747			0.00	1,002,952			
Grand Totals	15,962,743			2.94	272,842			0.6519	2,285,263			4.8240	18,259,498			

ND = Not Detected.

(a) PCP not detected above the detection limit of 5 µg/L; concentration-dependent calculations based on half the detection limit.

(b) PCP not detected above the detection limit of 25 µg/L; concentration-dependent calculations based on half the detection limit.

(c) PCP not detected above the detection limit of 5.25 µg/L; concentration-dependent calculations based on half the detection limit.

(d) PCP not detected above the detection limit of 0.473 µg/L.

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TABLE 2-4
SUMMARY OF STORM DRAIN MANHOLE LOCATION ANALYTICAL RESULTS
TIME OIL NORTHWEST TERMINAL

Location	Lab ID	Date Collected	TOTAL PETROLEUM HYDROCARBONS (a)					PENTACHLOROPHENOL (µg/L)
			Gasoline (mg/L)	Mineral Spirits (mg/L)	Kerosene (mg/L)	Diesel (mg/L)	Lube Oil (mg/L)	
SDM-1	0109005-02	9/4/2001	0.250 U	0.250 U	0.630 U	0.630 U	0.630 U	11.5
	0111183-02	11/30/2001	NA	NA	NA	0.250 U	0.500 U	0.700
	ED34K	2/28/2002	NA	NA	NA	0.3	0.50 U	100
	EG43A	4/5/2002	NA	NA	NA	NA	NA	82
	EN01A	6/27/2002	NA	NA	NA	NA	NA	190
	ES04I	8/28/2002	NA	NA	NA	NA	NA	25
	FU31G	8/27/2003	NA	NA	NA	NA	NA	120
	FY64A	10/20/2003	NA	NA	NA	NA	NA	43
	0402113-12	2/23/2004	NA	NA	NA	NA	NA	791
	0405022-07	5/4/2004	NA	NA	NA	NA	NA	1000
	0406059-04	6/9/2004	NA	NA	NA	NA	NA	595
	0408036-10	8/5/2004	NA	NA	NA	NA	NA	158
	0411066-13	11/11/2004	NA	NA	NA	NA	NA	1.61
SDM-2	0109005-01	9/4/2001	0.250 U	0.250 U	0.630 U	0.630 U	0.630 U	0.500 U
	0111183-01	11/30/2001	NA	NA	NA	0.261	0.500 U	0.500 U
	ED34L	2/28/2002	NA	NA	NA	0.25 U	0.50 U	0.46
	EN01B	6/27/2002	NA	NA	NA	NA	NA	0.25 U
	ES04J	8/28/2002	NA	NA	NA	NA	NA	0.30 U
	FY64B	10/20/2003	NA	NA	NA	NA	NA	0.79
RIVER OUTFALL	0210111-01	10/16/2002	NA	NA	NA	NA	NA	5 U
	0408057-01	8/9/2004	NA	NA	NA	NA	NA	0.507 U

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.

NA = Not Analyzed

(a) Samples collected in September, 2001 were analyzed using total petroleum hydrocarbon (TPH) method, NWTPH-HCID. Samples collected in November 2001 were analyzed using NWTPH-Dx.

TABLE 2-5
SUMMARY OF POTENTIALLY IMPACTED AREAS
PHASE III PRELIMINARY EVALUATION
TIME OIL NORTHWEST TERMINAL

Page 1 of 1

Potentially Impacted Area (a)	Description
B1	Area identified by Time Oil personnel as the location of the cargo pump area that contained the pumps used to distribute product throughout the terminal.
B2 and B6	Historical aerial photographs dating back to the mid-1950s indicate that a building was formerly located in each of these areas. Operations within these buildings are not known.
B3 and B14	Locations of the former loading racks where petroleum products were transferred from the Main tank farm and Bell Terminal tank farm to trucks.
B4	Three underground storage tanks (USTs), which reportedly contained leaded and unleaded fuel, and the associated pump dispensers were formerly located in this area. The tanks were removed in April 1990 and soil along the excavation sidewalls was removed to about 6 to 8 ft BGS.
B5	A 4,000-gallon heating oil tank was removed from this area in 1990. The heating tank was about 4 to 5 years old and no evidence of leaking was reported. Samples collected from the base of the excavation for field screening using a PID and sheen tests showed no evidence of contamination.
B7	An active railroad car loading rack was formerly located in this area.
B8	Location of two aboveground tanks formerly used for storage of aviation fuel.
B9	Long, thin, rectangular objects reported to be refining towers by Time Oil personnel were observed in this area in aerial photographs from 1966 and 1971. In addition, tanks were observed on their sides in this area in the 1971 aerial photograph.
B10	Area formerly used to store old tanks and refining towers.
B11	In a 1971 aerial photograph, dark staining was observed along the roadways in this area. Soil will be remediated in these areas as part of the east property remedial action (Landau Associates 2001b).
B12	Approximate area potentially impacted by a diesel spill in 1979. The spill was due to a split in Tank 29508.
B13	Location of a former UST and pump dispenser. An earlier UST was replaced with a new fiberglass tank in about 1990. The fiberglass tank and pump dispenser were removed in 2001.
B15	Aerial photographs dating back to 1958 indicate that a loading rack was formerly located in this area.
B16	Location of a former ballast stockpile from road construction.
B17	Location of a former gasoline spill.

(a) Potentially impacted areas are also referred to as Phase III preliminary evaluation biased sampling areas.

TABLE 5-1
SUMMARY OF SPLIT SOIL SAMPLE ANALYTICAL RESULTS
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification: SCH56-9-10 Laboratory Identification: 0110066-01 Date Collected: 10/9/2001		SCH56-15-15.5 0110065-3 10/9/2001	GP-BLT-0-15-56 K2107502-001 10/9/2001	GP-BLT-15-57 K2107502-004 10/9/2001	SCH58-17-18 0110066-02 10/9/2001
TOTAL PETROLEUM					
HYDROCARBONS (mg/kg)					
NWTPH-HCID					
Gasoline	NA	8750 J	NA	NA	NA
Diesel	NA	13200 J	NA	NA	NA
NWTPH-Dx					
Diesel	17.2 U	12700 J	18,000	15,000	18.5 U
NWTPH-G					
Gasoline	2.87 U	NA	1,000	750	3.09 U
PAHs (mg/kg)					
EPA Method SW8270					
2-Methylnaphthalene	NA	NA	31	78	NA
Acenaphthene	NA	1.6	0.84	2.3	NA
Acenaphthylene	NA	0.511	0.0061 U	0.0056 U	NA
Anthracene	NA	1.05	0.29	0.460	NA
Benzo(a)anthracene	NA	0.02	0.0078	0.015	NA
Benzo(a)pyrene	NA	0.00667 U	0.0061 U	0.0056 U	NA
Benzo(b)fluoranthene	NA	0.00667 U	0.0061 U	0.0056 U	NA
Benzo(g,h,i)perylene	NA	0.00667 U	0.0061 U	0.0056 U	NA
Benzo(k)fluoranthene	NA	0.00667 U	0.0061 U	0.0056 U	NA
Chrysene	NA	0.02	0.023	0.062	NA
Dibenzofuran	NA	NA	0.470	0.680	NA
Dibenz(a,h)anthracene	NA	0.00667 U	0.0061 U	0.0056 U	NA
Fluoranthene	NA	0.196	0.07	0.120	NA
Fluorene	NA	6.52	2.9	5.9	NA
Indeno(1,2,3-cd)pyrene	NA	0.00667 U	0.0061 U	0.0056 U	NA
Naphthalene	NA	16.6	10	11	NA
Phenanthrene	NA	10.3	6	12	NA
Pyrene	NA	0.465	0.13	0.260	NA
VOLATILES (mg/kg)					
EPA Method SW8260					
1,1,1,2-Tetrachloroethane	NA	0.0245 J	0.61 U	0.12 U	NA
1,1,2-Trichloroethane	NA	0.224 J	0.61 U	0.12 U	NA
1,2,4-Trimethylbenzene	NA	0.133 J	2.5 U	4.0	NA
1,3,5-Trimethylbenzene	NA	0.1 UJ	2.5 U	0.46	NA
1,3-Dichloropropane	NA	0.0169 J	0.61 U	0.12 U	NA
4-Isopropyltoluene	NA	0.24 J	2.5 U	1.4	NA
Acetone	NA	0.0351 J	25 U	4.5 U	NA
Bromoform	NA	0.126 J	0.61 U	0.12 U	NA
Dibromochloromethane	NA	0.0319 J	0.61 U	0.12 U	NA
Ethylbenzene	NA	0.01 UJ	0.61 U	0.38	NA
Isopropylbenzene	NA	5.5 J	7.1	5	NA
m,p-Xylene	NA	0.02 UJ	0.61 U	0.12 U	NA
Methyl Iodide	NA	0.001 UJ	0.61 U	0.12 U	NA
n-Butylbenzene	NA	7.56 J	16	9.4	NA
n-Propylbenzene	NA	29.3 J	34	16	NA
Naphthalene	NA	21.8 J	37	30	NA
sec-Butylbenzene	NA	4.18 J	6.3	5.6	NA
Styrene	NA	0.0318 J	0.61 U	0.12 U	NA
tert-Butylbenzene	NA	0.329 J	2.5 U	0.45 U	NA
Toluene	NA	0.01 UJ	0.61 U	0.12 U	NA

TABLE 5-1
SUMMARY OF SPLIT SOIL SAMPLE ANALYTICAL RESULTS
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification: Laboratory Identification: Date Collected:	SCH59-14-18 0110066-03 10/9/2001	GP-BLT-0-15-59 K2107502-009 10/9/2001	SCH61-15.6-16.4 0110065-1 10/9/2001	GP-BLT-16-61 K2107549-002 10/9/2001	SCH63-15.7-16.0 0110065-2 10/9/2001
TOTAL PETROLEUM					
HYDROCARBONS (mg/kg)					
NWTPH-HCID					
Gasoline	NA	NA	3230 J	NA	4620 J
Diesel	NA	NA	4270 J	NA	6120 J
NWTPH-Dx					
Diesel	10,200	11,000	5650 J	1,500	9,070 J
NWTPH-G					
Gasoline	1,410	630	NA	130	NA
PAHs (mg/kg)					
EPA Method SW8270					
2-Methylnaphthalene	NA	0.0055 U	NA	26	NA
Acenaphthene	1.3	0.97	0.845	0.47	0.474
Acenaphthylene	0.408	0.0055 U	0.209	0.0066 U	0.146
Anthracene	0.594	0.28	0.352	0.19	0.367
Benzo(a)anthracene	0.0122	0.0097	0.0365	0.069	0.0266
Benzo(a)pyrene	0.00667 U	0.0055 U	0.0244	0.059	0.011
Benzo(b)fluoranthene	0.00667 U	0.0055 U	0.0228	0.052	0.0113
Benzo(g,h,i)perylene	0.00667 U	0.0055 U	0.0119	0.029	0.00869
Benzo(k)fluoranthene	0.00667 U	0.0055 U	0.00692	0.022	0.00667 U
Chrysene	0.0166	0.033	0.0261	0.073	0.0194
Dibenzofuran		0.64		0.350	
Dibenz(a,h)anthracene	0.00667 U	0.0055 U	0.00667 U	0.0066 U	0.00667 U
Fluoranthene	0.0898	0.072	0.0861	0.14	0.0885
Fluorene	4.99	3.50	2.69	1.1	1.89
Indeno(1,2,3-cd)pyrene	0.00667 U	0.0055 U	0.00808	0.028	0.00667 U
Naphthalene	0.462	0.47	2.49	1.40	0.16
Phenanthrene	7.9	6.9	3.77	3.40	4.11
Pyrene	0.298	0.210	0.153	0.2	0.169
VOLATILES (mg/kg)					
EPA Method SW8260					
1,1,1,2-Tetrachloroethane	0.002 U	0.11 U	0.002 U	0.065 U	0.002 U
1,1,2-Trichloroethane	0.002 U	0.11 U	0.002 U	0.065 U	0.002 U
1,2,4-Trimethylbenzene	0.00618 J	0.44 U	5.94 J	4.5	0.0104
1,3,5-Trimethylbenzene	0.002 U	0.11 U	3.83 J	3.7	0.00682
1,3-Dichloropropane	0.002 U	0.11 U	0.002 U	0.065 U	0.002 U
4-Isopropyltoluene	0.002 U	0.44 U	0.552 J	0.65	0.001 U
Acetone	21.2 U	4.4 U	0.005 U	2.6 U	0.0974
Bromoform	0.002 U	0.11 U	0.002 U	0.065 U	0.002 U
Dibromochloromethane	0.002 U	0.11 U	0.002 U	0.065 U	0.002 U
Ethylbenzene	0.00538 J	0.11 U	0.0388 J	0.065 U	0.00916
Isopropylbenzene	2.16 J	1.8	0.866 J	0.44	0.231
m,p-Xylene	0.0148 J	0.11 U	0.0503 J	0.065 U	0.0282
Methyl Iodide	0.001 U	0.11 U	0.00886 J	0.065 U	0.001 U
n-Butylbenzene	7.22 J	8.0	2.94 J	5.3	5.44
n-Propylbenzene	7.5 J	7.1	3.54 J	2.4	4.74
Naphthalene	0.0568 J	0.44 U	3.57 J	2.0	0.0263
sec-Butylbenzene	3.06 J	3.4	1.09 J	1.1	2.12
Styrene	0.002 U	0.11 U	0.002 U	0.065 U	0.002 U
tert-Butylbenzene	0.0211 J	0.44 U	0.001 U	0.26 U	0.0108
Toluene	0.0116 J	0.11 U	0.0172 J	0.065 U	0.00974

TABLE 5-1
SUMMARY OF SPLIT SOIL SAMPLE ANALYTICAL RESULTS
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification: GP-BLT-0-15-63
Laboratory Identification: K2107549-005
Date Collected: 10/9/2001

TOTAL PETROLEUM**HYDROCARBONS (mg/kg)****NWTPH-HCID**

Gasoline	NA
Diesel	NA

NWTPH-Dx

Diesel	12,000
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NWTPH-G

Gasoline	790
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PAHs (mg/kg)**EPA Method SW8270**

2-Methylnaphthalene	4.80
Acenaphthene	0.870
Acenaphthylene	0.055 U
Anthracene	0.330
Benzo(a)anthracene	0.055 U
Benzo(a)pyrene	0.055 U
Benzo(b)fluoranthene	0.055 U
Benzo(g,h,i)perylene	0.055 U
Benzo(k)fluoranthene	0.055 U
Chrysene	0.055 U
Dibenzofuran	1.30
Dibenz(a,h)anthracene	0.055 U
Fluoranthene	0.680
Fluorene	2.70
Indeno(1,2,3-cd)pyrene	0.055 U
Naphthalene	0.39
Phenanthrene	5.70
Pyrene	0.170

VOLATILES (mg/kg)**EPA Method SW8260**

1,1,1,2-Tetrachloroethane	0.11 U
1,1,2-Trichloroethane	0.11 U
1,2,4-Trimethylbenzene	0.44 U
1,3,5-Trimethylbenzene	0.44 U
1,3-Dichloropropane	0.11 U
4-Isopropyltoluene	0.44 U
Acetone	4.4 U
Bromoform	0.11 U
Dibromochloromethane	0.11 U
Ethylbenzene	0.11 U
Isopropylbenzene	1.2
m,p-Xylene	0.11 U
Methyl Iodide	0.11 U
n-Butylbenzene	10
n-Propylbenzene	6.9
Naphthalene	0.44 U
sec-Butylbenzene	3.2
Styrene	0.11 U
tert-Butylbenzene	0.44 U
Toluene	0.11 U

Bold indicates value is a detected constituent.

NA = Not analyzed.

U = Indicates compound was analyzed for, but was not detected at the reported detection limit.

J = Data validation flag indicating the analyte was positively identified;

the associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 5-2
SOIL SAMPLE SUMMARY
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
BA1 (0-0.5)		0108172-32	8/22/2001	X			X	X				X					
BA1 (1-1.5)		0108172-33	8/22/2001	X			X	X	X			X					
BA1 (14-15)		0108172-35	8/22/2001	X			X	X				X					
BA2 (1-1.5)		0108172-29	8/22/2001	X			X	X				X					
BA2 (14-15)		0108172-31	8/22/2001	X			X	X			X	X					
BA3 (1-1.5)		0108182-01	8/23/2001	X			X	X				X					
BA3 (14-16)		0108182-03	8/23/2001	X			X	X			X	X					
BA4 (1-1.5)		0108182-04	8/23/2001	X			X	X				X					
BA4 (13-14)		0108182-06	8/23/2001	X			X	X				X					
BA5 (1-1.5)		0108182-08	8/23/2001	X			X	X				X					
BA5 (14-15)		0108182-07	8/23/2001	X			X	X				X					
BA6 (1-1.5)		0108182-10	8/23/2001	X			X	X				X					
BA6 (10.5-11.5)		0108182-12	8/23/2001	X			X	X				X					
BA7 (0-0.5)		0108196-20	8/27/2001	X			X	X				X					
BA7 (1-1.5)		0108196-21	8/27/2001	X			X	X				X					
BA7 (10.5-11.5)		0108196-23	8/27/2001	X			X	X				X					
BA8 (0-0.5)		108196-16	8/27/2001	X			X	X	X			X					
BA8 (0-0.5)	BA19 (0-0.5)	0108196-15	8/27/2001	X			X	X	X			X					
BA8 (1-1.5)		108196-17	8/27/2001	X			X	X				X					
BA8 (9-13)		108196-19	8/27/2001	X			X	X				X					
BA9 (0-0.5)		0108182-23	8/23/2001	X			X	X	X			X					
BA9 (1-1.5)		0108182-24	8/23/2001	X			X	X				X					
BA9 (13.5-14.5)		0108182-26	8/23/2001	X			X	X				X					
BA10 (0-0.5)		0108196-12	8/27/2001	X			X	X	X			X					
BA10 (1-1.5)		0108196-13	8/27/2001	X			X	X				X					
BA10 (5.5-7.5)		0108196-14	8/27/2001	X			X	X				X					
BA11 (0-0.5)		0108196-08	8/27/2001	X			X	X				X					
BA11 (1-1.5)		0108196-09	8/27/2001	X			X	X	X			X					
BA11 (5-5.5)		0108196-10	8/27/2001	X				X									
BA11 (6.5-11)		0108196-11	8/27/2001	X			X	X				X					
BA11 (6.5-11)	BA20 (CF)	0108196-07	8/27/2001	X			X	X				X					
BA12 (0-0.5)		0108151-05	8/20/2001	X			X	X	X			X					
BA12 (1-1.5)		0108151-06	8/20/2001	X			X	X	X			X					
BA12 (11-13)		0108151-08	8/20/2001	X			X	X	X			X					
BA14 (1-1.5)		0108208-14	8/28/2001	X			X	X				X					

TABLE 5-2
SOIL SAMPLE SUMMARY
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
BA14 (14-15)		0108208-16	8/28/2001	X			X	X				X					
BA15 (1-1.5)		0108172-22	8/22/2001	X			X	X				X					
BA15 (1-1.5)		0108172-22	8/22/2001	X			X	X				X					
BA15 (1-1.5)	BA18 (1-1.5)	0108172-19	8/22/2001	X			X	X				X					
BA15 (17-18)		0108172-24	8/22/2001	X			X	X				X					
BA16 (0-0.5)		0108172-25	8/22/2001	X			X	X	X			X					
BA16 (1-1.5)		0108172-26	8/22/2001	X			X	X				X					
BA16 (16-17)		0108172-28	8/22/2001	X			X	X				X					
BA17 (0-0.5)		0108182-19	8/23/2001	X			X	X	X			X					
BA17 (1-1.5)		0108182-20	8/23/2001	X			X	X	X		X	X					
BA17 (12-13)		0108182-22	8/23/2001	X			X	X	X		X	X					
BT-01 (0-0.5)		0207040-01	7/8/2002					X									
BT-01 (1-2)		0207040-02	7/8/2002					X									
BT-01 (5-6)		0207040-03	7/8/2002					X									
BT-01 (9-10)		0207040-04	7/8/2002					X									
BT-01 (13.5-14.5)		0207040-05	7/8/2002	X					X	X	X		X				
BT-02 (0-0.5)		0207040-08	7/8/2002					X									
BT-02 (1-2)		0207040-09	7/8/2002					X									
BT-02 (5-6)		0207040-010	7/8/2002					X									
BT-02 (9-10)		0207040-11	7/8/2002					X									
BT-02 (14-15)		0207040-012	7/8/2002					X									
BT-03 (0-0.5)		0207040-13	7/8/2002	X				X	X	X							
BT-03 (0-0.5)	BT-11(0-0.5)	0207040-06	7/8/2002					X	X	X							
BT-03 (1-2)		0207040-14	7/8/2002					X									
BT-03 (1-2)	BT-11(1-2)	0207040-07	7/8/2002					X									
BT-03 (5-6)		0207040-15	7/8/2002					X									
BT-03 (9-10)		0207040-16	7/8/2002					X									
BT-04 (0-0.5)		0207059-18	7/9/2002	X				X	X	X							
BT-04 (1-2)		0207059-19	7/9/2002					X									
BT-04 (5-6)		0207059-20	7/9/2002					X									
BT-04 (9-10)		0207059-21	7/9/2002	X				X	X	X							
BT-04 (12.5-13.5)		0207059-22	7/9/2002					X									
BT-05 (0-0.5)		0207040-17	7/8/2002					X									
BT-05 (1-2)		0207040-18	7/8/2002					X									
BT-05 (5-6)		0207040-19	7/8/2002					X									

TABLE 5-2
SOIL SAMPLE SUMMARY
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
BT-05 (9-10)		0207040-20	7/8/2002					X									
BT-05 (14-15)		0207040-21	7/8/2002	X					X	X	X		X				
BT-06 (0-0.5)		0207059-13	7/9/2002					X									
BT-06 (0-0.5)	BT-13 (0-0.5)	0207059-11	7/9/2002					X									
BT-06 (1-2)		0207059-14	7/9/2002					X									
BT-06 (1-2)	BT-13 (1-2)	0207059-12	7/9/2002					X									
BT-06 (5-6)		0207059-15	7/9/2002					X									
BT-06 (9-10)		0207059-16	7/9/2002					X									
BT-06 (14-15)		0207059-17	7/9/2002	X					X	X	X		X				
BT-07 (0-0.5)		0207040-22	7/8/2002					X									
BT-07 (0-0.5)	BT-12 (0-0.5)	0207040-33	7/8/2002					X									
BT-07 (1-2)		0207040-23	7/8/2002					X									
BT-07 (1-2)	BT-12 (1-2)	0207040-34	7/8/2002					X									
BT-07 (5-6)		0207040-24	7/8/2002					X									
BT-07 (9-10)		0207040-25	7/8/2002					X									
BT-07 (12.5-13.5)		0207040-26	7/8/2002					X									
BT-08 (0-0.5)		0207040-27	7/8/2002	X				X	X	X							
BT-08 (1-2)		0207040-28	7/8/2002					X									
BT-08 (5-6)		0207040-29	7/8/2002					X									
BT-08 (9-10)		0207040-30	7/8/2002					X									
BT-08 (13.5-14.5)		0207040-31	7/8/2002	X					X	X	X		X				
BT-09 (0-0.5)		0207059-06	7/9/2002					X									
BT-09 (1-2)		0207059-07	7/9/2002					X									
BT-09 (5-6)		0207059-08	7/9/2002					X									
BT-09 (9-10)		0207059-09	7/9/2002					X									
BT-09 (13.5-14.5)		0207059-10	7/9/2002					X									
BT-10 (0-0.5)		0207059-01	7/9/2002					X									
BT-10 (1-2)		0207059-02	7/9/2002					X									
BT-10 (5-6)		0207059-03	7/9/2002					X									
BT-10 (9-10)		0207059-04	7/9/2002					X									
BT-10 (13.5-14.5)		0207059-05	7/9/2002					X									
EP-VS015-001 (0-0.5)		0208160-19	8/29/2002		X												
EP-VS015-002 (0-0.5)		0208160-20	8/29/2002		X												
EP-VSR-001 (0-0.5)		0208160-223	8/29/2002		X												
G1 (1-1.5)		0108189-01	8/24/2001	X			X	X				X					

TABLE 5-2
SOIL SAMPLE SUMMARY
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
G1 (10-13)		0108189-03	8/24/2001	X			X	X	X			X					
G2 (0-0.5)		0108151-01	8/20/2001	X			X	X	X			X					
G2 (1-1.5)		0108151-02	8/20/2001	X			X	X	X			X					
G2 (15-21)		0108151-04	8/20/2001	X			X	X	X		X	X					
G2-4 (18.5-19.5)		0207087-02	7/11/2002					X									
G3 (0-0.5)		0108151-09	8/20/2001	X			X	X	X			X					
G3 (1-1.5)		0108151-10	8/20/2001	X			X	X	X			X					
G3 (11-15)		0108151-12	8/20/2001	X			X	X	X		X	X					
G4 (1-1.5)		0108182-13	8/23/2001	X			X	X				X					
G4 (12.5-14)		0108182-15	8/23/2001	X			X	X	X			X					
G4 (12.5-14)	G29 (CF)	0108182-16	8/23/2001	X			X	X	X			X					
G5 (1-1.5)		0108189-04	8/24/2001	X			X	X				X					
G5 (10.5-13)		0108189-06	8/24/2001	X			X	X				X					
G6 (0-0.5)		0108189-12	8/24/2001	X			X	X				X					
G6 (1-1.5)		0108189-13	8/24/2001	X			X	X				X					
G6 (8.5-11.5)		0108189-15	8/24/2001	X			X	X				X					
G7 (0-0.5)		0108196-01	8/27/2001	X			X	X	X			X					
G7 (1-1.5)		0108196-02	8/27/2001	X			X	X				X					
G7 (6.5-7.5)		0108196-03	8/27/2001	X			X	X				X					
G07-3 (0-0.5)		0309196-18	9/29/2003		X							X					
G07-4 (0-0.5)		0309196-21	9/29/2003		X							X					
G07-5 (0.0-5)		0309196-24	9/29/2003		X							X					
G8 (0-0.5)		0108151-13	8/20/2001	X			X	X	X			X					
G8 (1-1.5)		0108151-14	8/20/2001	X			X	X	X			X					
G8 (14-24)		0108151-17	8/20/2001	X			X	X	X			X					
G9 (0-0.5)		0108189-08	8/24/2001	X			X	X	X			X					
G9 (1-1.5)		0108189-09	8/24/2001	X			X	X				X					
G9 (1-1.5)	G30 (1-1.5)	0108189-07	8/24/2001	X			X	X				X					
G9 (13-15)		0108189-11	8/24/2001	X			X	X	X		X	X					
G10 (0-0.5)		0108189-17	8/24/2001	X			X	X				X					
G10 (1-1.5)		0108189-18	8/24/2001	X			X	X				X					
G10 (10.5-12)		0108189-20	8/24/2001	X			X	X				X					
G10-4 (0-0.5)		0309196-27	9/29/2003		X							X					
G10-4 (1-1.5)		0309196-28	9/29/2003		X												
G10-5 (0-0.5)		0309196-44	9/29/2003		X							X					

TABLE 5-2
SOIL SAMPLE SUMMARY
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
G10-5 (1-1.5)		0309196-45	9/29/2003		X												
G11 (0-0.5)		0108196-04	8/27/2001	X			X	X				X					
G11 (1-1.5)		0108196-05	8/27/2001	X			X	X				X					
G11 (5.5-6.5)		0108196-06	8/27/2001	X			X	X				X					
G11-3 (0-0.5)		0309196-29	9/29/2003		X							X					
G11-3 (1-1.5)		0309196-31	9/29/2003		X							X					
G12 (0-0.5)		0108151-18	8/20/2001	X			X	X	X			X					
G12 (1-1.5)		0108151-19	8/20/2001	X			X	X				X					
G12 (13-20)		0108151-21	8/20/2001	X			X	X	X			X					
G12-3 (17.5-18.5)		0207087-04	7/11/2002					X									
G13 (0-0.5)		0108172-01	8/21/2001	X			X	X	X			X					
G13 (1-1.5)		0108172-02	8/21/2001	X			X	X				X					
G13 (14-17)		0108172-04	8/21/2001	X			X	X	X		X	X					
G13-4 (14.5-15.5)		0207087-05	7/11/2002	X					X	X	X		X				
G14 (0-0.5)		0108172-05	8/21/2001	X			X	X				X					
G14 (1-1.5)		0108172-06	8/21/2001	X			X	X				X					
G14 (13-15)		0108172-08	8/21/2001	X			X	X			X	X					
G15 (0-0.5)		0108172-44	8/22/2001	X			X	X				X					
G15 (0-0.5)	G31 (0-0.5)	0108172-40	8/22/2001	X			X	X				X					
G15 (1-1.5)		0108172-45	8/22/2001	X			X	X				X					
G15 (8-13)		0108172-47	8/22/2001	X			X	X				X					
G15-4 (0-0.5)		0309196-38	9/29/2003		X							X					
G15-5 (0-0.5)		0309196-10	9/29/2003		X							X					
G15-6 (0-0.5)		0309196-35	9/29/2003		X							X					
G16 (0-0.5)		0108172-09	8/21/2001	X			X	X	X			X					
G16 (1-1.5)		0108172-10	8/21/2001	X			X	X				X					
G16 (5-5.5)		0108172-11	8/21/2001	X													
G16 (15-18)		0108172-12	8/21/2001	X			X	X				X					
G16-GRAB		0108172-13	8/21/2001					X				X					
G17 (0-0.5)		0108172-15	8/21/2001	X			X	X	X			X					
G17 (1-1.5)		0108172-16	8/21/2001	X			X	X				X					
G17 (13-15)		0108172-18	8/21/2001	X			X	X				X					
G17-4 (0-0.5)		0309196-07	9/29/2003		X							X					
G17-5 (0-0.5)		0309196-01	9/29/2003		X							X					
G17-6 (0-0.5)		0309196-04	9/29/2003		X							X					

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TIME OIL NORTHWEST TERMINAL

Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
G18 (0-0.5)		0108172-36	8/22/2001	X			X	X				X					
G18 (1-1.5)		0108172-37	8/22/2001					X				X					
G18 (12-15)		0108172-39	8/22/2001	X			X	X				X					
G19 (0-0.5)		0108172-48	8/22/2001	X			X	X				X					
G19 (1-1.5)		0108172-49	8/22/2001	X			X	X				X					
G19 (9-11)		0108172-51	8/22/2001	X			X	X				X					
G19-3 (0-0.5)		0309196-13	9/29/2003		X							X					
G19-4 (0-0.5)		0309196-32	9/29/2003		X							X					
G19-5 (0-0.5)		0309196-41	9/29/2003		X							X					
G20 (0-0.5)		0108208-02	8/28/2001	X			X	X	X			X					
G20 (1-1.5)		0108208-03	8/28/2001	X			X	X				X					
G20 (10.5-14.5)		0108208-05	8/28/2001	X			X	X				X					
G20 (10.5-14.5)	G28 (CF)	0108208-01	8/28/2001	X			X	X				X					
G21 (0-0.5)		0108208-18	8/28/2001	X			X	X	X			X					
G21 (1-1.5)		0108208-19	8/28/2001	X			X	X				X					
G21 (14-17.5)		0108208-21	8/28/2001	X			X	X	X		X	X					
G21-3(13-14)		0207087-01	7/11/2002					X									
G22 (0-0.5)		0108215-05	8/29/2001	X			X	X				X					
G22 (1-1.5)		0108215-06	8/29/2001	X			X	X				X					
G22 (12.5-15.5)		0108215-08	8/29/2001	X			X	X	X			X					
G23 (0-0.5)		0108215-01	8/29/2001	X			X	X				X					
G23 (1-1.5)		0108215-02	8/29/2001	X			X	X				X					
G23 (9-14)		0108215-04	8/29/2001	X			X	X	X			X					
G24 (0-0.5)		0108208-06	8/28/2001	X			X	X	X			X					
G24 (1-1.5)		0108208-07	8/28/2001	X			X	X				X					
G24 (9-15)		0108208-09	8/28/2001	X			X	X				X					
G25 (0-0.5)		0108215-09	8/29/2001	X			X	X				X					
G25 (1-1.5)		0108215-10	8/29/2001	X			X	X				X					
G25 (14-17)		0108215-12	8/29/2001	X			X	X				X					
G2-5 (16-17)		0207087-03	7/11/2002					X	X	X							
G26 (0-0.5)		0108215-13	8/29/2001	X			X	X				X					
G26 (1-1.5)		0108215-14	8/29/2001	X			X	X				X					
G26 (14-15)		0108215-16	8/29/2001	X			X	X				X					
G27 (0-0.5)		0108208-10	8/28/2001	X			X	X	X			X					
G27 (1-1.5)		0108208-11	8/28/2001	X			X	X	X			X					

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SOIL SAMPLE SUMMARY
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TIME OIL NORTHWEST TERMINAL

Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
G27 (13-15)		0108208-13	8/28/2001	X			X	X	X			X					
G27-4 (0-0.5)		0309196-16	9/29/2003		X												
G27-5 (0-0.5)		0309196-17	9/29/2003		X												
HB01 (1-1.5)		0310117-02	10/15/2003		X		X		X		X	X					
HB01 (5-6)		0310117-03	10/15/2003		X		X		X		X	X					
HB01 (10-11)		0310117-04	10/15/2003		X		X		X		X	X					
HB01 (14-15)		0310117-05	10/15/2003		X		X		X		X	X					
HB02 (1-1.5)		0310117-07	10/15/2003		X		X		X		X	X					
HB02 (5-6)		0310117-08	10/15/2003		X		X		X		X	X					
HB02 (10-11)		0310117-09	10/15/2003		X		X		X		X	X					
HB02 (13-14)		0310117-10	10/15/2003		X		X		X		X	X					
HB03 (1-1.5)		0310117-21	10/15/2003		X		X		X		X	X					
HB03 (5-6)		0310117-22	10/15/2003		X		X		X		X	X					
HB03 (10-11)		0310117-23	10/15/2003		X		X		X		X	X					
HB04 (1-1.5)		0310117-16	10/15/2003		X		X		X		X	X					
HB04 (5-6)		0310117-17	10/15/2003		X		X		X		X	X					
HB04 (10-11)		0310117-18	10/15/2003		X		X		X		X	X					
HB04 (12-13)		0310117-19	10/15/2003		X		X		X		X	X					
HB05 (1-1.5)		0310117-12	10/15/2003		X		X		X		X	X					
HB05 (5-6)		0310117-13	10/15/2003		X		X		X		X	X					
HB05 (10-11)		0310117-14	10/15/2003		X		X		X		X	X					
LB1(11-12.5)		Q650P	10/23/96			X		X									
LB1(15.5-16.5)		Q650Q	10/23/96			X		X									
LB2(12-13.5)		Q650S	10/23/96			X		X									
LB2(18.5-19.5)		Q650T	10/23/96			X		X									
LB3(12-13.5)		Q650V	10/23/96	X		X	X	X	X			X					
LB3(17-18)		Q650X	10/23/96			X		X									
LB4(12-13.5)		Q650AS	10/25/96			X		X						X			
LB4(17-18)		Q650AT	10/25/96			X		X									
LB6(12-13.5)		Q650AE	10/23/96	X		X	X	X				X					
LB6(17-18)		Q650AF	10/23/96			X		X									
LB7(12-13.5)		Q650AW	10/25/96			X		X									
LB7(17-18)		Q650AX	10/25/96			X		X									
LB8(3.5-5.0)		Q650AH	10/24/96			X		X									
LB8(5-6.2)		Q650AI	10/24/96			X		X									

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Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
LB10(0.5-2.0)		Q650AL	10/24/96			X		X									
LB10(6.5-8.0)		Q650AM	10/24/96			X		X									
LB11 (12.5-14.2)		R923C	03/10/97		X	X	X		X								
LB11 (17-17.6)		R923D	03/10/97		X	X			X		X		X				
LB12 (13.2-14.0)		R923F	03/10/97	X		X			X		X		X				
LB12 (15-16)		R923G	03/10/97	X		X			X		X		X				
LB13 (12.5-14)		R923I	03/10/97	X		X	X		X								
LB13 (15-16.5)		R923J	03/10/97	X		X	X		X								
LB14 (12.5-14.0)		R923M	03/10/97	X		X	X		X								
LB14 (18-19)		R923N	03/10/97	X		X			X		X		X				
LB15 (5-6.5)		R923O	03/10/97		X	X			X		X		X				
LB15 (7.5-9.0)		R923P	03/10/97		X	X			X		X		X				
LB15 (12.5-14)		R923Q	03/10/97		X	X			X		X		X				
LB15 (16.5-17.3)		R923R	03/10/97		X	X			X		X		X				
LB16 (0-0.5)		R923AY	03/12/97	X		X			X		X	X	X				
LB16 (5-6.5)		R923AZ	03/12/97		X	X			X		X	X	X				
LB16 (7.5-9.0)		R923BA	03/12/97		X	X			X		X	X	X				
LB16 (7.5-9.0)	LS7 (27.5-29.0)	R923T	03/12/97		X	X			X		X	X	X				
LB16 (21-22.5)		R923BB	03/12/97		X	X			X		X	X	X				
LB17 (7.5-9.0)		R923Z	03/11/97	X		X			X		X	X	X				
LB17 (10-11.5)		R923AA	03/11/97	X		X	X		X			X					
LB17 (18-19.5)		R923AB	03/11/97	X		X			X		X	X	X				
LB18 (7.5-9.0)		R923AD	03/11/97		X	X			X		X	X	X				
LB18 (18-19.5)		R923AE	03/11/97		X	X			X		X	X	X				
LB19 (7.5-9.0)		R923AG	03/11/97		X	X			X		X	X	X				
LB19 (18.0-20.2)		R923AH	03/11/97		X	X			X		X	X	X				
LB20 (2.5-4.0)		R923AJ	03/11/97		X	X			X		X	X	X				
LB20 (7.5-9.0)		R923AK	03/11/97	X		X			X		X	X	X				
LB20 (16.3-17.0)		R923AL	03/11/97	X		X			X		X	X	X				
LB21 (7.5-9.0)		R923AN	03/11/97		X	X			X		X	X	X				
LB21 (15.4-16.4)		R923AO	03/11/97		X	X			X		X	X	X				
LB22 (7.5-9.0)		R923AQ	03/11/97	X		X			X		X	X	X				
LB22 (16.8-17.3)		R923AR	03/11/97	X		X			X		X	X	X				
LB23 (7.5-9.0)		R923AT	03/11/97		X	X			X		X	X	X				
LB23 (16.7-17.7)		R923AU	03/11/97		X	X			X		X	X	X				

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Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
LB24 (2.5-4.0)		S057A	03/21/97						X								
LB24 (7.5-9.0)		S057B	03/21/97						X								
LB24 (12.5-14.0)		S057C	03/21/97						X								
LS1(0-0.5)		Q650A	10/23/96	X		X	X	X	X			X					
LS2(0-0.5)		Q650B	10/23/96			X		X									
LW1D (0.0-0.5)		R950O	03/14/97		X	X			X		X		X				
LW1D (7.5-9.0)		R950P	03/14/97		X	X			X		X		X				
LW1D (7.5-9.0)	LS7 (17.5-19.0)	R950S	03/14/97		X	X			X		X		X				
LW1D (16.5-19.0)		R950Q	03/14/97		X	X			X		X		X				
LW1D (30-31.5)		S037B	03/17/97		X	X			X		X		X				
LW1S (15-16.50)		R950R	03/14/97												X	X	X
LW2S (12.5-14.0)		S037P	03/18/97	X		X	X		X					X			
LW2S (12.5-14.0)	LS7 (22.5-24.0)	S037R	03/18/97	X		X	X		X								
LW2S (16.5-17.0)		S037Q	03/18/97	X		X			X		X		X	X			
LW3D (7.5-9.0)		S037T	03/18/97		X	X			X		X	X	X				
LW3D (12.5-14.0)		S037U	03/18/97		X	X	X		X			X					
LW3D (16.0-17.2)		S037V	03/18/97		X	X			X		X	X	X				
LW3D (24.0-25.5)		S037Z	03/19/97	X	X	X			X		X	X	X				
LW3D (36.5-39.0)		S037AA	03/19/97	X	X	X			X			X	X				
LW4D (0-0.5)		R950A	03/12/97		X	X			X		X		X				
LW4D (31.5-33.0)		R950H	03/13/97		X	X			X		X		X				
LW5S (10-11.5)		R923V	03/12/97	X		X			X		X	X	X				
LW5S (16.5-17.2)		R923X	03/12/97	X		X			X		X	X	X				
LW6D (0-0.5)		R950I	03/13/97		X	X			X		X		X				
LW6D (15-16.5)		R950J	03/13/97		X	X			X		X		X				
LW6D (16.5-18.0)		R950K	03/13/97												X	X	X
LW6D (24.0-25.5)		R950L	03/13/97		X	X					X		X				
LW6D (28.5-30.0)		R950M	03/13/97		X	X			X		X		X				
LW7S (0-0.5)		S037C	03/17/97		X	X			X		X		X				
LW7S (7.5-9.0)		S037D	03/17/97		X	X			X		X		X				
LW7S (12.5-14.0)		S037E	03/17/97	X		X	X		X								
LW7S (19.5-20.3)		S037F	03/17/97		X	X			X		X		X				
LW19S (16.5-17.5)		0309195-01	9/29/2003		X		X		X		X	X					
LW20D (12-13)		0310011-01	9/30/2003		X		X		X		X	X					
LW21S (13.5-14.5)		0310149-03	10/21/2003		X		X		X		X	X					

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LW22D (24-25)		0309163-04	9/24/2003		X		X		X		X	X	X				
LW23D (22.5-23.5)		0309163-03	9/24/2003		X		X		X		X	X	X				
LW24D (26-27)		0310149-02	10/20/2003		X		X		X		X	X					
LW25D (28-29)		0310149-01	10/20/2003		X		X		X		X	X					
LW26D (15-16)		0309185-01	9/25/2003		X		X		X		X	X					
LW27S (13.5-14.5)		0309185-02	9/25/2003		X		X		X		X	X					
LW27S (21-22)		0309185-03	9/25/2003		X		X		X		X	X					
LW28S (12-13)		0309163-02	9/23/2003		X		X		X		X	X	X				
LW28S (12-13)		0310011-05	10/1/2003		X		X		X		X	X					
LW29D (15-16)		0309163-01	9/22/2003		X		X		X		X	X	X				
LW30S (13.5-14.5)		0309137-01	9/19/2003		X		X		X		X	X	X				
LW31S (15-16)		0310011-06	10/1/2003		X		X		X		X	X					
LW32D (13.5-14.5)		0310041-02	10/2/2003		X		X		X		X	X					
LW33S (13.5-14.5)		0310041-01	10/2/2003		X		X		X		X	X					
LW35 (27-28)		0310011-02	10/1/2003		X		X		X		X	X					
LW35 (29-29.5)		0310011-03	10/1/2003		X		X		X		X	X					
LW35 (30-31)		0310011-04	10/1/2003		X		X		X		X	X					
LW36D (7-8)		0411033-04	11/2/2004	X					X	X	X	X					
LW37D (6-7)		0411033-05	11/2/2004	X					X	X	X	X					
LW38D (7-8)		0411033-06	11/2/2004	X					X	X	X	X					
LW39D (5-6)		0411033-07	11/3/2004	X					X	X	X	X					
LW40S (21-21.5)		0411033-02	11/1/2004	X					X	X	X	X					
LW41S (0-0.5)		0410156-02	10/28/2004	X					X	X	X	X					
LW41S (1-105)		0410156-03	10/28/2004	X					X	X	X	X					
LW41S (16-17)		0410156-05	10/28/2004	X					X	X	X	X					
LW42S (0-0.5)		0410156-06	10/28/2004	X					X	X	X	X					
LW42S (1-1.5)		0410156-07	10/28/2004	X					X	X	X	X					
LW42S (5-5.5)		0410156-08	10/28/2004	X					X	X							
LW42S (13-14)		0410156-09	10/28/2004	X			X		X	X	X	X					
LW43S (0.05)		0410156-010	10/28/2004	X			X		X	X	X	X					
LW43S (1-1.5)		0410156-011	10/28/2004	X			X		X	X	X	X					
LW43S (13-14)		0410156-013	10/28/2004	X			X		X	X	X	X					
LW44S (0-0.5)		0410156-014	10/28/2004	X			X		X	X	X	X					
LW44S (1-1.5)		0410156-015	10/28/2004	X			X		X	X	X	X					
LW44S (12.5-13.5)		0410156-017	10/28/2004	X			X		X	X	X	X					

TABLE 5-2
SOIL SAMPLE SUMMARY
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification	Duplicate ID	Laboratory Identification	Date Collected	SEMIVOLATILES	PAHs	CHLOROPHENOL/PCP	VOLATILES	HCID	DIESEL	OIL	GASOLINE	METALS	BTEX	DIOXIN/FURANS	pH	TOC	TOTAL SOLIDS
LW45D (27-28)		0411033-03	11/1/2004	X					X	X	X	X					
RA14-02 (0.5-0.75)		0107115-02	7/16/2001		X												
RA14-03 (0-0.5)		0108077-01	8/7/2001		X												
RA15-02 (0.5-0.75)		0107115-08	7/16/2001		X												
RA15-02 (0-0.5)		0107115-07	7/16/2001		X												
RA16-01 (0.5-0.75)		0108145-01	7/16/2001		X												
RA16-06 (0.0.5)		0107115-11	8/17/2001		X												
RA16-07 (0-0.5)		0108229-03	8/30/2001		X												
RW3		12.5-14'	11/22/99														
RW3		15-16.5'	11/22/99														
SCH56 (9-10)		0110066-01	10/9/2001	X			X	X	X	X							
SCH56 (15-15.5)		0110065-3	10/9/2001						X	X	X						
SCH58 (17-18)		0110066-02	10/9/2001						X	X	X						
SCH59(14-18)		0110066-03	10/9/2001	X			X		X	X	X						
SCH61 (15.6-16.4)		0110065-1	10/9/2001	X			X	X	X	X							
SCH63 (15.7-16.0)		0110065-2	10/9/2001	X			X	X	X	X							

TABLE 5-3
SUMMARY OF SPLIT GROUNDWATER SAMPLE ANALYTICAL RESULTS
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification:	SCH56-GW	GP-BLT-S-56	GP-BLT-S-57	GP-BLT-S-59	SCH60-GW	GP-BLT-S-60
Laboratory Identification:	0110064-01	K2107502-002	K2107502-005	K2107502-007	0110064-02	K2107502-008
Date Collected:	10/9/2001	10/9/2001	10/9/2001	10/9/2001	10/9/2001	10/9/2001
TOTAL PETROLEUM HYDROCARBONS						
NWTPH-Dx (mg/L)						
Diesel	1.14	7.5	1.500	4.8	0.250 UJ	0.240 U
Lube Oil	0.500 U	0.480 U	0.490 U	0.630 U	0.500 UJ	0.480 U
NWTPH-G (mg/L)						
Gasoline	1.210	1.300	0.560	0.600	0.100 U	0.05 U
SEMIVOLATILES (µg/L)						
EPA Method SW8270						
Napthalene	NA	6.3	3.7	0.066	NA	NA
2-Methylnaphthalene	NA	2.2	13	0.028	NA	NA
Acenaphthylene	NA	0.020 U	0.020 U	0.023 U	NA	NA
Acenaphthene	NA	0.50	0.69	0.097	NA	NA
Dibenzofuran	NA	0.45	0.51	0.058	NA	NA
Fluorene	NA	0.80	1.3	0.12	NA	NA
Phenanthrene	NA	0.44	1.9	0.062	NA	NA
Anthracene	NA	0.057	0.11	0.023 U	NA	NA
Fluoranthene	NA	0.038	0.035	0.023 U	NA	NA
Pyrene	NA	0.059	0.050	0.023 U	NA	NA
Benzo(a)anthracene	NA	0.020 U	0.020 U	0.023 U	NA	NA
Chrysene	NA	0.020 U	0.020 U	0.023 U	NA	NA
Benzo(b)fluoranthene	NA	0.020 U	0.020 U	0.023 U	NA	NA
Benzo(k)fluoranthene	NA	0.020 U	0.020 U	0.023 U	NA	NA
Benzo(a)pyrene\	NA	0.020 U	0.020 U	0.023 U	NA	NA
Indeno(1,2,3-cd)pyrene	NA	0.020 U	0.020 U	0.023 U	NA	NA
Dibenz(a,h)anthracene	NA	0.020 U	0.020 U	0.023 U	NA	NA
Benzo(g,h,i,)perylene	NA	0.020 U	0.020 U	0.023 U	NA	NA

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TABLE 5-3
SUMMARY OF SPLIT GROUNDWATER SAMPLE ANALYTICAL RESULTS
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification:	SCH56-GW	GP-BLT-S-56	GP-BLT-S-57	GP-BLT-S-59	SCH60-GW	GP-BLT-S-60
Laboratory Identification:	0110064-01	K2107502-002	K2107502-005	K2107502-007	0110064-02	K2107502-008
Date Collected:	10/9/2001	10/9/2001	10/9/2001	10/9/2001	10/9/2001	10/9/2001
VOLATILES (µg/L)						
Method SW8260B						
1,1,1,2-Tetrachloroethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,1,1-Trichloroethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,1,2,2-Tetrachloroethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,1,2-Trichloroethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,1-Dichloroethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,1-Dichloroethene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,1-Dichloropropene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,2,3-Trichlorobenzene	0.500 U	2.0 U	2.0 U	2.0 U	NA	2.0 U
1,2,3-Trichloropropane	0.500 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,2,4-Trichlorobenzene	0.500 U	2.0 U	2.0 U	2.0 U	NA	2.0 U
1,2,4-Trimethylbenzene	0.540	2.0 U	2.0 U	2.0 U	NA	2.0 U
1,2-Dibromo-3-chloropropane	1.00 U	2.0 U	2.0 U	2.0 U	NA	2.0 U
1,2-Dibromoethane	0.200 U	2.0 U	2.0 U	2.0 U	NA	2.0 U
1,2-Dichlorobenzene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,2-Dichloroethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,2-Dichloropropane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,3,5-Trimethylbenzene	0.240	2.0 U	2.0 U	2.0 U	NA	2.0 U
1,3-Dichlorobenzene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,3-Dichloropropane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
1,4-Dichlorobenzene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
2,2-Dichloropropane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
2-Butanone	1.00 U	20 U	20 U	20 U	NA	20 U
2-Chlorotoluene	0.200 U	2.0 U	2.0 U	2.0 U	NA	2.0 U
2-Hexanone	1.00 U	20 U	20 U	20 U	NA	20 U
4-Chlorotoluene	0.200 U	2.0 U	2.0 U	2.0 U	NA	2.0 U
4-Isopropyltoluene	0.560	2.0 U	2.0 U	2.0 U	NA	2.0 U
4-Methyl-2-Pentanone	1.00 U	20 U	20 U	20 U	NA	20 U
Acetone	1.00 U	20 U	20 U	20 U	NA	20 U
Acrolein	5.00 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Acrylonitrile	1.00 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Benzene	0.210	0.50 U	0.50 U	0.50 U	NA	0.50 U
Bromobenzene	0.200 U	2.0 U	2.0 U	2.0 U	NA	2.0 U
Bromochloromethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Bromodichloromethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Bromoethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Bromoform	0.500 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Bromomethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U

TABLE 5-3
SUMMARY OF SPLIT GROUNDWATER SAMPLE ANALYTICAL RESULTS
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification:	SCH56-GW	GP-BLT-S-56	GP-BLT-S-57	GP-BLT-S-59	SCH60-GW	GP-BLT-S-60
Laboratory Identification:	0110064-01	K2107502-002	K2107502-005	K2107502-007	0110064-02	K2107502-008
Date Collected:	10/9/2001	10/9/2001	10/9/2001	10/9/2001	10/9/2001	10/9/2001
Carbon Disulfide	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Carbon tetrachloride	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Chlorobenzene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Chloroethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Chloroform	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Chloromethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
cis-1,2-Dichloroethene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
cis-1,3-Dichloropropene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Dibromochloromethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Dibromomethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Ethylbenzene	3.33	3.7	0.50 U	0.50 U	NA	0.50 U
Hexachlorobutadiene	0.500 U	2.0 U	2.0 U	2.0 U	NA	2.0 U
Isopropylbenzene	23.4	31	3.5	13	NA	2.0 U
m,p-Xylene	0.400 U	0.84	0.50 U	0.50 U	NA	0.50 U
Methyl Iodide	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Methylene Chloride	0.300 U	1.0 U	1.0 U	1.0 U	NA	1.0 U
n-Butylbenzene	10.0	14	3.5	6.4	NA	2.0 U
n-Propylbenzene	79.1	130	8.9	31	NA	2.0 U
Naphthalene	39.7	43	13	2.0 U	NA	2.0 U
o-Xylene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
sec-Butylbenzene	6.81	8.0	2.4	4.9	NA	2.0 U
Styrene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
tert-Butylbenzene	0.560	2.0 U	2.0 U	2.0 U	NA	2.0 U
Tetrachloroethene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Toluene	0.280	0.50 U	0.50 U	0.50 U	NA	0.50 U
trans-1,2-Dichloroethene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
trans-1,3-Dichloropropene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
trans-1,4-Dichloro-2-butene	1.00 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Trichloroethene	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Trichlorofluoromethane	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Vinyl Acetate	0.200 U	0.50 U	0.50 U	0.50 U	NA	0.50 U
Vinyl Chloride	0.0100 U	0.50 U	0.50 U	0.50 U	NA	0.50 U

TABLE 5-3
SUMMARY OF SPLIT GROUNDWATER SAMPLE ANALYTICAL RESULTS
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification:		SCH61-GW	GP-BLT-S-61	SCH62-GW	GP-BLT-S-62	SCH63B-GW	GP-BLT-S-63
Laboratory Identification:		0110064-03	K2107502-010	0110064-04	K2107549-001	0110079-01	K2107549-004
Date Collected:		10/9/2001	10/9/2001	10/9/2001	10/9/2001	10/10/2001	10/9/2001
TOTAL PETROLEUM HYDROCARBONS							
NWTPH-Dx (mg/L)							
Diesel	1.10	2.4	0.966	1.8	796 J	530	
Lube Oil	0.500 U	0.480 U	0.500 U	0.480 U	10.0 U	49 U	
NWTPH-G (mg/L)							
Gasoline	6.02	4.900	0.100 U	0.062	NA	2.6	
SEMIVOLATILES (µg/L)							
EPA Method SW8270							
Napthalene	NA	4.2	NA	0.24 U	NA	2.4 U	
2-Methylnaphthalene	NA	7.9	NA	0.42	NA	2 U	
Acenaphthylene	NA	0.020 U	NA	0.026	NA	0.20 U	
Acenaphthene	NA	0.55	NA	0.082	NA	2.0	
Dibenzofuran	NA	0.34	NA	0.024	NA	4.4	
Fluorene	NA	0.87	NA	0.053	NA	6.5	
Phenanthrene	NA	0.55	NA	0.43	NA	19	
Anthracene	NA	0.064	NA	0.046	NA	1.6	
Fluoranthene	NA	0.069	NA	0.47	NA	1.1	
Pyrene	NA	0.077	NA	0.6	NA	2.5	
Benzo(a)anthracene	NA	0.020 U	NA	0.13	NA	0.82	
Chrysene	NA	0.020 U	NA	0.18	NA	0.89	
Benzo(b)fluoranthene	NA	0.020 U	NA	0.19	NA	0.28	
Benzo(k)fluoranthene	NA	0.020 U	NA	0.063	NA	0.020 U	
Benzo(a)pyrene\	NA	0.020 U	NA	0.16	NA	0.23	
Indeno(1,2,3-cd)pyrene	NA	0.020 U	NA	0.15	NA	0.020 U	
Dibenz(a,h)anthracene	NA	0.020 U	NA	0.020 U	NA	0.020 U	
Benzo(g,h,i,)perylene	NA	0.020 U	NA	0.16	NA	0.020 U	

TABLE 5-3
SUMMARY OF SPLIT GROUNDWATER SAMPLE ANALYTICAL RESULTS
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

Sample Identification: SCH61-GW		GP-BLT-S-61	SCH62-GW	GP-BLT-S-62	SCH63B-GW	GP-BLT-S-63
Laboratory Identification: 0110064-03		K2107502-010	0110064-04	K2107549-001	0110079-01	K2107549-004
Date Collected: 10/9/2001		10/9/2001	10/9/2001	10/9/2001	10/10/2001	10/9/2001
VOLATILES (µg/L)						
Method SW8260B						
1,1,1,2-Tetrachloroethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,1,1-Trichloroethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,1,2,2-Tetrachloroethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,1,2-Trichloro-1,2,2-trifluoroethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,1,2-Trichloroethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,1-Dichloroethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,1-Dichloroethene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,1-Dichloropropene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,2,3-Trichlorobenzene	0.500 U	2.0 U	NA	2.0 U	NA	2.0 U
1,2,3-Trichloropropane	0.500 U	0.50 U	NA	0.50 U	NA	0.50 U
1,2,4-Trichlorobenzene	0.500 U	2.0 U	NA	2.0 U	NA	2.0 U
1,2,4-Trimethylbenzene	356	36	NA	2.0 U	NA	2.0 U
1,2-Dibromo-3-chloropropane	1.00 U	2.0 U	NA	2.0 U	NA	2.0 U
1,2-Dibromoethane	0.200 U	2.0 U	NA	2.0 U	NA	2.0 U
1,2-Dichlorobenzene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,2-Dichloroethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,2-Dichloropropane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,3,5-Trimethylbenzene	185	22	NA	2.0 U	NA	2.0 U
1,3-Dichlorobenzene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,3-Dichloropropane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
1,4-Dichlorobenzene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
2,2-Dichloropropane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
2-Butanone	1.00 U	20 U	NA	20 U	NA	20 U
2-Chlorotoluene	0.200 U	2.0 U	NA	2.0 U	NA	2.0 U
2-Hexanone	1.00 U	20 U	NA	20 U	NA	20 U
4-Chlorotoluene	0.200 U	2.0 U	NA	2.0 U	NA	2.0 U
4-Isopropyltoluene	21.3	2.0 U	NA	2.0 U	NA	2.0 U
4-Methyl-2-Pentanone	1.00 U	20 U	NA	20 U	NA	20 U
Acetone	1.00 U	20 U	NA	20 U	NA	20 U
Acrolein	5.00 U	0.50 U	NA	0.50 U	NA	0.50 U
Acrylonitrile	1.00 U	0.50 U	NA	0.50 U	NA	0.50 U
Benzene	0.270	0.50 U	NA	0.50 U	NA	0.50 U
Bromobenzene	0.200 U	2.0 U	NA	2.0 U	NA	2.0 U
Bromochloromethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Bromodichloromethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Bromoethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Bromoform	0.500 U	0.50 U	NA	0.50 U	NA	0.50 U
Bromomethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U

TABLE 5-3
SUMMARY OF SPLIT GROUNDWATER SAMPLE ANALYTICAL RESULTS
PHASE III REMEDIAL INVESTIGATION
TIME OIL NORTHWEST TERMINAL

	Sample Identification: SCH61-GW	GP-BLT-S-61	SCH62-GW	GP-BLT-S-62	SCH63B-GW	GP-BLT-S-63
	Laboratory Identification: 0110064-03	K2107502-010	0110064-04	K2107549-001	0110079-01	K2107549-004
	Date Collected: 10/9/2001	10/9/2001	10/9/2001	10/9/2001	10/10/2001	10/9/2001
Carbon Disulfide	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Carbon tetrachloride	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Chlorobenzene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Chloroethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Chloroform	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Chloromethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
cis-1,2-Dichloroethene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
cis-1,3-Dichloropropene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Dibromochloromethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Dibromomethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Ethylbenzene	9.73	0.50 U	NA	0.50 U	NA	0.50 U
Hexachlorobutadiene	0.500 U	2.0 U	NA	2.0 U	NA	2.0 U
Isopropylbenzene	65.8	7.4	NA	2.0 U	NA	23
m,p-Xylene	0.400 U	0.50 U	NA	0.50 U	NA	0.50 U
Methyl Iodide	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Methylene Chloride	0.300 U	1.0 U	NA	1.0 U	NA	1.0 U
n-Butylbenzene	72.4	12	NA	2.0 U	NA	16
n-Propylbenzene	191	25	NA	2.0 U	NA	110
Naphthalene	256	17	NA	2.0 U	NA	2.7
o-Xylene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
sec-Butylbenzene	31.5	4.1	NA	2.0 U	NA	9.3
Styrene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
tert-Butylbenzene	0.200 U	2.0 U	NA	2.0 U	NA	2.0 U
Tetrachloroethene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Toluene	0.970	0.50 U	NA	0.50 U	NA	0.50 U
trans-1,2-Dichloroethene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
trans-1,3-Dichloropropene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
trans-1,4-Dichloro-2-butene	1.00 U	0.50 U	NA	0.50 U	NA	0.50 U
Trichloroethene	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Trichlorofluoromethane	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Vinyl Acetate	0.200 U	0.50 U	NA	0.50 U	NA	0.50 U
Vinyl Chloride	0.0100 U	0.50 U	NA	0.50 U	NA	0.50 U

Bold indicates value is a detected constituent.

NA = Not analyzed.

U = Indicates compound was analyzed for, but was not detected at the reported detection limit.

UU = The analyte was not detected in the sample; the reported sample detection limit is an estimate.

J = Data validation flag indicating the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

TABLE 6-1
HORIZONTAL HYDRAULIC GRADIENTS
UPPER AND LOWER WATER-BEARING ZONES
TIME OIL NORTHWEST TERMINAL

		Season	Water Table Elevation MSL)	(ft,	Difference in Elevation (ft)	Distance Between Locations (a) (ft)	Hydraulic Gradient (ft/ft)
Upper Zone							
North			LW-7S	P			
	October-03	Fall	14.65	13.38	1.27	340	3.74E-03
	February-04	Winter	18.09	15.40	2.69	340	7.91E-03
	June-04	Spring	16.35	14.28	2.07	340	6.09E-03
	August-04	Summer	15.10	13.58	1.52	340	4.47E-03
	November-04	Fall	15.57	Dry	NA	NA	NA
						Average	5.55E-03
Central			D	LW-4S			
	October-03	Fall	14.50	11.74	2.76	340	8.11E-03
	February-04	Winter	18.21	13.77	4.44	340	1.31E-02
	June-04	Spring	16.26	13.08	3.18	340	9.35E-03
	August-04	Summer	15.02	12.29	2.73	340	8.03E-03
	November-04	Fall	14.35	11.71	2.64	340	7.76E-03
						Average	9.26E-03
Confining Unit Transition			Contour	LW-27S			
	October-03	Fall	13.00	5.19	7.81	70	1.12E-01
	February-04	Winter	17.00	9.07	7.93	115	6.90E-02
	June-04	Spring	15.00	9.33	5.67	165	3.44E-02
	August-04	Summer	14.00	6.13	7.87	140	5.62E-02
	November-04	Fall	13.00	5.93	7.07	110	6.43E-02
						Average	6.71E-02
South			LW-32S	LW-31S			
	October-03	Fall	13.69	12.39	1.30	150	8.67E-03
	February-04	Winter	17.12	15.19	1.93	160	1.21E-02
	June-04	Spring	15.05	13.59	1.46	165	8.85E-03
	August-04	Summer	14.04	13.74	0.30	160	1.87E-03
	November-04	Fall	13.67	12.33	1.34	165	8.12E-03
						Average	7.91E-03
Lower Zone							
North (b)			LW-1D	RIVER			
	October-03	Fall	4.80	3.19	1.61	650	2.48E-03
	February-04	Winter	8.40	7.24	1.16	640	1.81E-03
	June-04	Spring	9.18	8.34	0.84	620	1.35E-03
	August-04	Summer	4.81	2.70	2.11	620	3.40E-03
	November-04	Fall	5.62	3.48	2.14	630	3.40E-03
						Average	2.49E-03
Central			OX-8D	LW-6D			
	October-03	Fall	4.72	4.37	0.35	510	6.86E-04
	February-04	Winter	8.32	7.84	0.48	500	9.60E-04
	June-04	Spring	9.07	8.94	0.13	500	2.60E-04
	August-04	Summer	4.75	4.41	0.34	500	6.80E-04
	November-04	Fall	5.59	5.23	0.36	500	7.20E-04
						Average	6.61E-04
South			Contour	LW-30D			
	October-03	Fall	4.60	4.48	0.12	90	1.33E-03
	February-04	Winter	8.80	8.51	0.29	250	1.16E-03
	June-04	Spring	9.40	8.85	0.55	260	2.12E-03
	August-04	Summer	5.40	4.19	1.21	270	4.48E-03
	November-04	Fall	6.00	5.05	0.95	215	4.42E-03
						Average	2.70E-03

(a) Distance was estimated along groundwater flow path.

(b) Distance from LW-1D to River was estimated from LW-1D to river bank in direction of groundwater flow.

TABLE 6-2
VERTICAL GRADIENTS
MARCH 1997-NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Upper Groundwater Zone			Lower Groundwater Zone			Vertical Gradients	
Well	Date	GW Elevation	Well	Date	GW Elevation	Vertical Gradient (a)	Average Vertical Gradient
LW1S	03/31/97	21.31	LW1D	03/31/97	15.60	0.25	
LW1S	07/16/97	19.62	LW1D	07/16/97	10.66	0.40	
LW1S	10/21/97	16.94	LW1D	10/21/97	7.02	0.47	
LW1S	01/27/98	19.21	LW1D	01/27/98	11.25	0.36	
LW1S	05/18/98	18.81	LW1D	05/18/98	11.78	0.32	
LW1S	08/17/98	16.29	LW1D	08/17/98	6.49	0.47	
LW1S	11/13/98	15.20	LW1D	11/13/98	5.54	0.48	
LW1S	02/16/99	21.36	LW1D	02/16/99	11.01	0.45	
LW1S	05/18/99	19.04	LW1D	05/18/99	11.55	0.34	
LW1S	09/21/99	15.76	LW1D	09/21/99	5.40	0.51	
LW1S	12/06/99	16.10	LW1D	12/06/99	10.31	0.28	
LW1S	02/16/00	18.54	LW1D	02/16/00	10.15	0.38	
LW1S	05/23/00	17.44	LW1D	05/23/00	9.69	0.36	
LW1S	08/29/00	15.45	LW1D	08/29/00	5.50	0.49	
LW1S	11/09/00	14.70	LW1D	11/09/00	5.33	0.47	
LW1S	02/12/01	15.14	LW1D	02/12/01	6.08	0.45	
LW1S	06/04/01	15.19	LW1D	06/04/01	5.95	0.46	
LW1S	08/16/01	14.51	LW1D	08/16/01	4.58	0.50	
LW1S	11/28/01	14.71	LW1D	11/28/01	6.58	0.41	
LW1S	02/27/02	18.65	LW1D	02/27/02	8.00	0.49	
LW1S	06/27/02	16.70	LW1D	06/27/02	10.50	0.45	
LW1S	08/26/02	15.49	LW1D	08/26/02	5.46	0.30	
LW1S	11/12/02	14.24	LW1D	11/12/02	5.40	0.42	
LW1S	02/11/03	17.85	LW1D	02/11/03	7.20	0.61	
LW1S	05/08/03	18.55	LW1D	05/08/03	9.40	0.85	
LW1S	08/27/03	15.50	LW1D	08/27/03	5.91	0.76	
LW1S	10/23/03	14.64	LW1D	10/23/03	4.80	0.16	
LW1S	02/19/04	18.15	LW1D	02/19/04	8.40	0.71	
LW1S	06/09/04	16.36	LW1D	06/09/04	9.18	0.43	
LW1S	08/10/04	15.10	LW1D	08/10/04	4.81	0.30	
LW1S	11/18/04	14.54	LW1D	11/18/04	5.62	0.15	0.44
D	03/31/97	21.38	LW3D	03/31/97	11.42	0.36	
D	07/16/97	19.59	LW3D	07/16/97	2.71	0.61	
D	10/21/97	16.77	LW3D	10/21/97	7.44	0.35	
D	01/27/98	19.32	LW3D	01/27/98	9.14	0.37	
D	05/18/98	17.81	LW3D	05/18/98	11.59	0.23	
D	08/17/98	16.21	LW3D	08/17/98	6.18	0.38	
D	11/13/98	15.03	LW3D	11/13/98	5.24	0.38	
D	02/16/99	21.54	LW3D	02/16/99	10.80	0.39	
D	05/18/99	19.04	LW3D	05/18/99	11.38	0.28	
D	09/21/99	15.63	LW3D	09/21/99	5.04	0.41	
D	12/06/99	16.00	LW3D	12/06/99	10.11	0.23	
D	02/16/00	18.54	LW3D	02/16/00	9.82	0.32	
D	05/23/00	17.30	LW3D	05/23/00	9.64	0.29	
D	02/12/01	15.05	LW3D	02/12/01	5.95	0.36	
D	06/04/01	15.09	LW3D	06/04/01	5.71	0.37	
D	08/16/01	14.40	LW3D	08/16/01	4.37	0.40	
D	11/28/01	14.59	LW3D	11/28/01	6.32	0.33	
D	02/27/02	18.67	LW3D	02/27/02	7.67	0.40	
D	06/27/02	16.61	LW3D	06/27/02	10.25	0.24	
D	08/26/02	15.36	LW3D	08/26/02	5.17	0.40	

TABLE 6-2
VERTICAL GRADIENTS
MARCH 1997-NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Upper Groundwater Zone			Lower Groundwater Zone			Vertical Gradients	
Well	Date	GW Elevation	Well	Date	GW Elevation	Vertical Gradient (a)	Average Vertical Gradient
D	11/12/02	14.08	LW3D	11/12/02	5.23	0.35	
D	02/11/03	17.94	LW3D	02/11/03	6.77	0.41	
D	05/08/03	18.56	LW3D	05/08/03	9.12	0.35	
D	08/27/03	15.44	LW3D	08/27/03	5.70	0.38	
D	10/23/03	14.50	LW3D	10/23/03	4.62	0.39	
D	02/19/04	18.21	LW3D	02/19/04	8.15	0.37	
D	06/09/04	16.26	LW3D	06/09/04	8.98	0.28	
D	08/10/04	15.02	LW3D	08/10/04	4.70	0.40	
D	11/18/04	14.35	LW3D	11/18/04	5.38	0.36	0.36
J1	03/31/97	20.68	J2	03/31/97	15.27	0.27	
J1	07/16/97	19.21	J2	07/16/97	10.37	0.44	
J1	10/21/97	16.60	J2	10/21/97	6.63	0.52	
J1	01/27/98	18.67	J2	01/27/98	10.96	0.38	
J1	05/18/98	17.43	J2	05/18/98	11.51	0.30	
J1	08/17/98	15.92	J2	08/17/98	5.95	0.53	
J1	11/13/98	14.93	J2	11/13/98	5.01	0.54	
J1	02/16/99	20.79	J2	02/16/99	10.65	0.50	
J1	05/18/99	18.51	J2	05/18/99	11.25	0.36	
J1	09/21/99	15.34	J2	09/21/99	4.92	0.56	
J1	12/06/99	15.75	J2	12/06/99	10.12	0.30	
J1	02/16/00	18.03	J2	02/16/00	9.76	0.41	
J1	05/23/00	16.92	J2	05/23/00	9.32	0.39	
J1	08/29/00	15.12	J2	08/29/00	4.98	0.55	
J1	11/09/00	14.40	J2	11/09/00	4.99	0.52	
J1	02/12/01	14.83	J2	02/12/01	5.73	0.50	
J1	06/04/01	14.87	J2	06/04/01	5.48	0.51	
J1	08/16/01	14.22	J2	08/16/01	4.08	0.56	
J1	11/28/01	14.47	J2	11/28/01	6.20	0.45	
J1	02/27/02	18.08	J2	02/27/02	7.44	0.53	
J1	06/27/02	16.30	J2	06/27/02	10.17	0.32	
J1	08/26/02	15.19	J2	08/26/02	4.98	0.55	
J1	11/12/02	13.99	J2	11/12/02	5.05	0.50	
J1	02/11/03	17.37	J2	02/11/03	6.70	0.49	
J1	05/08/03	18.05	J2	05/08/03	9.00	0.31	
J1	08/27/03	15.24	J2	08/27/03	5.53	0.46	
J1	10/23/03	14.39	J2	10/23/03	4.47	0.71	
J1	02/19/04	17.82	J2	02/19/04	8.13	0.50	
J1	06/09/04	15.99	J2	06/09/04	8.89	0.34	
J1	08/10/04	14.84	J2	08/10/04	4.41	0.54	
J1	11/18/04	14.25	J2	11/18/04	5.26	0.69	0.47
LW4S	03/31/97	17.49	LW4D	03/31/97	15.44	0.11	
LW4S	07/16/97	15.60	LW4D	07/16/97	10.74	0.27	
LW4S	10/21/97	13.38	LW4D	10/21/97	7.15	0.37	
LW4S	01/27/98	15.13	LW4D	01/27/98	11.33	0.22	
LW4S	05/18/98	14.18	LW4D	05/18/98	11.63	0.15	
LW4S	08/17/98	12.96	LW4D	08/17/98	6.36	0.40	
LW4S	11/13/98	12.30	LW4D	11/13/98	5.18	0.44	
LW4S	02/16/99	17.16	LW4D	02/16/99	11.38	0.31	
LW4S	05/18/99	14.83	LW4D	05/18/99	11.40	0.20	
LW4S	09/21/99	12.65	LW4D	09/21/99	5.39	0.45	
LW4S	12/06/99	13.18	LW4D	12/06/99	9.96	0.19	
LW4S	02/16/00	14.42	LW4D	02/16/00	9.94	0.26	

TABLE 6-2
VERTICAL GRADIENTS
MARCH 1997-NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Upper Groundwater Zone			Lower Groundwater Zone			Vertical Gradients	
Well	Date	GW Elevation	Well	Date	GW Elevation	Vertical Gradient (a)	Average Vertical Gradient
LW4S	05/23/00	13.55	LW4D	05/23/00	9.62	0.23	
LW4S	08/29/00	12.48	LW4D	08/29/00	5.39	0.44	
LW4S	11/09/00	12.09	LW4D	11/09/00	4.98	0.44	
LW4S	02/12/01	13.18	LW4D	02/12/01	5.46	0.47	
LW4S	06/04/01	12.45	LW4D	06/04/01	5.51	0.43	
LW4S	08/16/01	11.87	LW4D	08/16/01	3.90	0.50	
LW4S	11/28/01	12.42	LW4D	11/28/01	5.76	0.41	
LW4S	02/27/02	14.44	LW4D	02/27/02	7.52	0.40	
LW4S	06/27/02	13.37	LW4D	06/27/02	10.02	0.20	
LW4S	08/26/02	12.58	LW4D	08/26/02	5.15	0.46	
LW4S	11/12/02	11.22	LW4D	11/12/02	4.91	0.41	
LW4S	02/11/03	14.23	LW4D	02/11/03	7.09	0.42	
LW4S	05/08/03	14.51	LW4D	05/08/03	8.96	0.32	
LW4S	08/27/03	12.39	LW4D	08/27/03	5.39	0.43	
LW4S	10/23/03	11.74	LW4D	10/23/03	4.32	0.47	
LW4S	02/19/04	13.77	LW4D	02/19/04	8.03	0.45	
LW4S	06/09/04	13.08	LW4D	06/09/04	8.57	0.26	
LW4S	08/10/04	12.29	LW4D	08/10/04	4.30	0.46	
LW4S	11/18/04	11.71	LW4DR	11/24/04	3.88	0.46	0.36
LW9S	05/18/99	11.46	LW9D	05/18/99	10.96	0.03	
LW9S	09/21/99	dry	LW9D	09/21/99	5.75	---	
LW9S	12/06/99	11.40	LW9D	12/06/99	9.94	0.10	
LW9S	02/16/00	dry	LW9D	02/16/00	9.81	---	
LW9S	05/23/00	dry	LW9D	05/23/00	9.83	---	
LW9S	08/29/00	dry	LW9D	08/29/00	5.62	---	
LW9S	11/09/00	dry	LW9D	11/09/00	5.02	---	
LW9S	02/12/01	dry	LW9D	02/12/01	5.85	---	
LW9S	06/04/01	dry	LW9D	06/04/01	5.83	---	
LW9S	08/16/01	dry	LW9D	08/16/01	4.41	---	
LW9S	11/28/01	dry	LW9D	11/28/01	5.58	---	
LW9S	02/27/02	dry	LW9D	02/27/02	8.01	---	
LW9S	06/27/02	dry	LW9D	06/27/02	10.60	---	
LW9S	08/26/02	dry	LW9D	08/26/02	6.08	---	
LW9S	11/12/02	dry	LW9D	11/12/02	5.25	---	
LW9S	02/11/03	dry	LW9D	02/11/03	8.95	---	
LW9S	05/08/03	dry	LW9D	05/08/03	9.33	---	
LW9S	08/27/03	dry	LW9D	08/27/03	5.48	---	
LW9S	10/23/03	dry	LW9D	10/23/03	4.76	---	
LW9S	02/19/04	dry	LW9D	02/19/04	8.43	---	
LW9S	06/09/04	dry	LW9D	06/09/04	9.07	---	
LW9S	08/10/04	dry	LW9D	08/10/04	5.44	---	
LW9S	11/18/04	dry	LW9D	11/18/04	5.62	---	0.07
LW10S	05/18/99	13.51	LW10D	05/18/99	11.30	0.14	
LW10S	09/21/99	11.62	LW10D	09/21/99	5.31	0.44	
LW10S	12/06/99	12.21	LW10D	12/06/99	9.94	0.15	
LW10S	02/16/00	13.13	LW10D	02/16/00	9.92	0.21	
LW10S	05/23/00	12.50	LW10D	05/23/00	9.61	0.19	
LW10S	08/29/00	dry	LW10D	08/29/00	5.26	--	
LW10S	11/09/00	dry	LW10D	11/09/00	4.86	--	
LW10S	02/12/01	dry	LW10D	02/12/01	5.49	--	
LW10S	06/04/01	dry	LW10D	06/04/01	5.50	--	
LW10S	08/16/01	dry	LW10D	08/16/01	3.96	--	

TABLE 6-2
VERTICAL GRADIENTS
MARCH 1997-NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Upper Groundwater Zone			Lower Groundwater Zone			Vertical Gradients	
Well	Date	GW Elevation	Well	Date	GW Elevation	Vertical Gradient (a)	Average Vertical Gradient
LW10S	11/28/01	dry	LW10D	11/28/01	5.66	--	
LW10S	02/27/02	12.98	LW10D	02/27/02	7.54	0.36	
LW10S	06/27/02	12.48	LW10D	06/27/02	10.09	0.16	
LW10S	08/26/02	dry	LW10D	08/26/02	5.21	--	
LW10S	11/12/02	dry	LW10D	11/12/02	4.95	--	
LW10S	02/11/03	13.25	LW10D	02/11/03	7.29	0.39	
LW10S	05/08/03	13.07	LW10D	05/08/03	9.02	0.27	
LW10S	08/27/03	dry	LW10D	08/27/03	5.38	---	
LW10S	10/23/03	dry	LW10D	10/23/03	4.33	---	
LW10S	02/19/04	12.98	LW10D	02/19/04	8.14	0.32	
LW10S	06/09/04	12.08	LW10D	06/09/04	8.66	0.23	
LW10S	08/10/04	dry	LW10D	08/10/04	4.42	---	
LW10S	11/18/04	dry	LW10D	11/18/04	5.04	---	0.26
LW11S	05/18/99	17.63	LW11D	05/18/99	10.45	0.41	
LW11S	09/21/99	14.87	LW11D	09/21/99	8.28	0.40	
LW11S	12/06/99	15.10	LW11D	12/06/99	7.23	0.48	
LW11S	02/16/00	17.16	LW11D	02/16/00	8.69	0.49	
LW11S	05/23/00	16.09	LW11D	05/23/00	9.54	0.39	
LW11S	08/29/00	14.59	LW11D	08/29/00	--	--	
LW11S	11/09/00	13.92	LW11D	11/09/00	--	--	
LW11S	02/12/01	14.48	LW11D	02/12/01	5.90	0.53	
LW11S	06/04/01	14.45	LW11D	06/04/01	5.69	0.54	
LW11S	08/16/01	13.86	LW11D	08/16/01	2.10	0.74	
LW11S	11/28/01	14.00	LW11D	11/28/01	4.50	0.60	
LW11S	02/27/02	17.24	LW11D	02/27/02	7.24	0.57	
LW11S	06/27/02	15.70	LW11D	06/27/02	10.20	0.33	
LW11S	08/26/02	14.73	LW11D	08/26/02	6.33	0.52	
LW11S	11/12/02	13.57	LW11D	11/12/02	5.17	0.54	
LW11S	02/11/03	16.64	LW11D	02/11/03	7.25	0.55	
LW11S	05/08/03	17.19	LW11D	05/08/03	9.76	0.43	
LW11S	08/27/03	14.78	LW11D	08/27/03	5.69	0.56	
LW11S	10/23/03	13.98	LW11D	10/23/03	5.06	0.56	
LW11S	02/19/04	16.97	LW11D	02/19/04	7.96	0.52	
LW11S	06/09/04	15.38	LW11D	06/09/04	9.00	0.39	
LW11S	08/10/04	14.44	LW11D	08/10/04	4.58	0.61	
LW11S	11/18/04	13.84	LW11D	11/18/04	5.37	0.54	0.51
			LW12D1 (b)	05/18/99	11.57		
			LW12D1	09/21/99	5.58		
			LW12D1	12/06/99	10.30		
			LW12D1	02/16/00	10.13		
			LW12D1	05/23/00	9.79		
			LW12D1	08/29/00	5.64		
			LW12D1	11/09/00	5.36		
			LW12D1	02/12/01	6.10		
			LW12D1	06/04/01	6.03		
			LW12D1	08/16/01	4.63		
			LW12D1	11/28/01	6.69		
			LW12D1	02/27/02	8.14		
			LW12D1	06/27/02	10.44		
			LW12D2 (b,c)	05/18/99	11.01	0.01	
			LW12D2	09/21/99	4.55	0.02	

TABLE 6-2
VERTICAL GRADIENTS
MARCH 1997-NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Upper Groundwater Zone			Lower Groundwater Zone			Vertical Gradients	
Well	Date	GW Elevation	Well	Date	GW Elevation	Vertical Gradient (a)	Average Vertical Gradient
			LW12D2	12/06/99	9.84	0.01	
			LW12D2	02/16/00	9.32	0.02	
			LW12D2	05/23/00	8.86	0.02	
			LW12D2	08/29/00	4.56	0.02	
			LW12D2	11/09/00	4.68	0.01	
			LW12D2	02/12/01	5.36	0.01	
			LW12D2	06/04/01	5.14	0.02	
			LW12D2	08/16/01	3.81	0.02	
			LW12D2	11/28/01	6.07	0.01	
			LW12D2	02/27/02	6.86	0.02	
			LW12D2	06/27/02	9.80	0.01	0.01 (c)
LW20S	10/23/03	14.65	LW20D	08/27/03	4.65	0.61	
LW20S	02/19/04	16.96	LW20D	02/19/04	8.51	0.48	
LW20S	06/09/04	15.33	LW20D	06/09/04	9.06	0.38	
LW20S	08/10/04	14.61	LW20D	08/10/04	4.61	0.61	
LW20S	11/18/04	15.09	LW20D	11/18/04	5.34	0.59	0.53
LW29S	10/23/03	12.46	LW29D	08/27/03	4.66	0.50	
LW29S	02/19/04	14.82	LW29D	02/19/04	8.57	0.37	
LW29S	06/09/04	13.49	LW29D	06/09/04	8.96	0.28	
LW29S	08/10/04	12.78	LW29D	08/10/04	4.60	0.52	
LW29S	11/18/04	12.37	LW29D	11/18/04	5.32	0.45	0.43
LW32S	10/23/03	13.69	LW32D	08/27/03	4.36	0.68	
LW32S	02/19/04	17.12	LW32D	02/19/04	8.91	0.53	
LW32S	06/09/04	15.05	LW32D	06/09/04	9.45	0.39	
LW32S	08/10/04	14.04	LW32D	08/10/04	5.44	0.62	
LW32S	11/18/04	13.67	LW32D	11/18/04	6.23	0.54	0.55

(a)

Vertical gradient was calculated using a distance between the midpoint of the screened intervals in each groundwater zone or unit (including an adjustment for variations in the elevation of the water table within the screened interval). The screen was not fully saturated at time of WL measurements; midpoint of screened interval was adjusted to account for unsaturated portion of screen.

(c) Monitoring wells LW12D1 and LW12D2 were abandoned in the summer of 2002 prior to the remedial action conducted within the former PCP mixing area.

(b) LW12D2 is screened in the deep sand unit; values shown represent vertical gradient between lower groundwater zone and deep groundwater zone.

TABLE 7-1
FOURTH QUARTER 2004 THROUGH SECOND QUARTER 2005 GROUNDWATER DATA - DETECTED ANALYTES
SHORELINE (BEACH) WELLS
TIME OIL NORTHWEST TERMINAL

Sample Identification: Laboratory Identification: Date Collected:	Minimum Preliminary Screening Level	Shoreline (Beach) Wells												
		LW36D	LW36D	LW36D	LW37D	LW37D	LW37D	LW38D	LW38D	LW38D	LW39D	LW39D	LW39D-Dup	LW39D
		0411059-08 11/10/2004	0502088-01 2/17/2005	P5F0441-04 06/08/2005	0411059-09 11/10/2004	0502088-02 2/17/2005	P5F0441-05 06/08/2005	0411059-10 11/10/2004	0502088-03 2/17/2005	P5F0441-03 06/08/2005	0411059-11 11/10/2004	0502088-04 2/17/2005	0502088-05 2/17/2005	P5F0441-02 06/08/2005
SEMIVOLATILES (µg/L)														
EPA Method SW8270														
Acenaphthene	520 (a)	0.99 U	0.951 U	5.00 U	1.01 U	1.01 U	5.00 U	0.984 U	0.997 U	5.00 U	1.06 U	0.978 U	0.99 U	5.00 U
bis(2-Ethylhexyl)phthalate	2.2 (b)	0.99 U	0.951 U	10.00 U	1.01 U	1.01 U	10.00 U	0.984 U	0.997 U	10.00 U	1.06 U	0.978 U	1.25	10.00 U
Fluorene	3.9 (c)	0.99 U	0.951 U	5.00 U	1.01 U	1.01 U	5.00 U	0.984 U	0.997 U	5.00 U	1.06 U	0.978 U	0.99 U	5.00 U
Phenanthrene	6.3 (c)	0.99 U	0.951 U	5.00 U	1.01 U	1.01 U	5.00 U	0.984 U	0.997 U	5.00 U	1.06 U	0.978 U	0.99 U	5.00 U
Pentachlorophenol	3 (b)	4.95 U	4.76 U	10.00 U	5.07 U	5.04 U	10.00 U	4.92 U	4.99 U	10.00 U	5.29 U	4.89 U	4.95 U	10.00 U
PAHs (µg/L)														
EPA Method SW8270 - SIM														
Acenaphthene	520 (a)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.12	0.0515	0.100 U	0.145	0.061	0.0612	0.100 U
Acenaphthylene	620 (c)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Anthracene	13 (c)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Benzo(a)anthracene	0.018 (b)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Benzo(a)pyrene	0.014 (c)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Benzo(b)fluoranthene	0.018 (b)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Benzo(g,h,i)perylene	--	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Benzo(k)fluoranthene	0.018 (b)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Chrysene	0.018 (b)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Fluoranthene	6.16 (c)	0.0505 U	0.0478 U	0.100 U	0.0756	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Fluorene	3.9 (c)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.19	0.0515	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Indeno(1,2,3-cd)pyrene	0.018 (b)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Naphthalene	620 (a)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.08	0.0515 U	0.100 U	0.114	0.0509 U	0.051 U	0.100 U
Phenanthrene	620 (c)	0.0505 U	0.0478 U	0.100 U	0.054 U	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
Pyrene	4000 (b)	0.0505 U	0.0478 U	0.100 U	0.0864	0.0499 U	0.100 U	0.05 U	0.0515 U	0.100 U	0.0517 U	0.0509 U	0.051 U	0.100 U
VOLATILES (µg/L)														
EPA Method SW8260														
1,2,4-Trimethylbenzene	130 (a)	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1 U	1.00 U
Benzene	51 (b)	0.3 U	0.3 U	1.00 U	0.3 U	0.3 U	1.00 U	0.3 U	0.3 U	1.00 U	0.3 U	0.3 U	0.3 U	1.00 U
Isopropylbenzene	130 (c)	1 U	1 U	2.00 U	1 U	1 U	2.00 U	1 U	1 U	2.00 U	1 U	1 U	1 U	2.00 U
Methyl tert-Butyl Ether	31,000 (d)	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1 U	1.00 U
n-Butylbenzene	130 (c)	1 U	1 U	5.00 U	1 U	1 U	5.00 U	1 U	1 U	5.00 U	1 U	1 U	1 U	5.00 U
n-Propylbenzene	130 (c)	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1 U	1.00 U
Naphthalene	620 (a)	1 U	1 U	2.00 U	1 U	1 U	2.00 U	1 U	1 U	2.00 U	1 U	1 U	1 U	2.00 U
o-Xylene	1.8 (c)	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1 U	1.00 U
sec-Butylbenzene	130 (c)	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1 U	1.00 U
tert-Butylbenzene	130 (c)	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1.00 U	1 U	1 U	1 U	1.00 U
HYDROCARBONS (mg/L)														
NWTPH-Dx														
TPH-Diesel Range	--	0.252	0.243 U	0.250 U	0.25 U	0.248 U	0.250 U	0.954	0.375	0.250 U	0.455	0.247 U	0.758	0.250 U
TPH-Motor Oil Range	--	0.58	0.486 U	0.500 U	0.5 U	0.495 U	0.500 U	0.702	0.475 U	0.500 U	0.52	0.494 U	0.509 U	0.500 U
NWTPH-G														
TPH-Gasoline Range	12 (d)	0.1 U	0.1 U	0.080 U	0.1 U	0.1 U	0.080 U	0.120	0.1 U	0.080 U	0.133	0.1 U	0.1 U	0.080 U

TABLE 7-1
FOURTH QUARTER 2004 THROUGH SECOND QUARTER 2005 GROUNDWATER DATA - DETECTED ANALYTES
SHORELINE (BEACH) WELLS
TIME OIL NORTHWEST TERMINAL

Sample Identification: Laboratory Identification: Date Collected:	Minimum Preliminary Screening Level	Shoreline (Beach) Wells												
		LW36D	LW36D	LW36D	LW37D	LW37D	LW37D	LW38D	LW38D	LW38D	LW39D	LW39D	LW39D-Dup	LW39D
		0411059-08 11/10/2004	0502088-01 2/17/2005	P5F0441-04 06/08/2005	0411059-09 11/10/2004	0502088-02 2/17/2005	P5F0441-05 06/08/2005	0411059-10 11/10/2004	0502088-03 2/17/2005	P5F0441-03 06/08/2005	0411059-11 11/10/2004	0502088-04 2/17/2005	0502088-05 2/17/2005	P5F0441-02 06/08/2005
PRIORITY POLLUTANT METALS (mg/L)														
Arsenic (7060)	1.5 (e)	0.001 U	0.001 U	0.00106	0.00578	0.001 U	0.001 U	0.00867	0.00391	0.00438	0.0107	0.00292	0.00274	0.00105
Chromium (6010)	0.011 (c)	0.005 U	0.0064	0.001 U	0.0261	0.0078	0.001 U	0.0138	0.008	0.001 U	0.0124	0.0063	0.0064	0.001 U
Copper (6010)	0.009 (f)	0.01 U	0.01 U	0.002 U	0.0196	0.01 U	0.002 U	0.01 U	0.01 U	0.002 U	0.01 U	0.01 U	0.01 U	0.002 U
Lead (7421)	0.02 (e)	0.00025 U	0.0001 U	0.001 U	0.0098	0.000728	0.001 U	0.0002 U	0.000117	0.001 U	0.0003	0.000132	0.0001	0.001 U
Nickel (6010)	0.052 (c)	0.005 U	0.005 U	0.002 U	0.0117	0.005 U	0.002 U	0.005 U	0.005 U	0.002 U	0.005 U	0.005 U	0.005 U	0.00365
Zinc (6010)	0.10 (g)	0.01 U	0.01 U	0.005 U	0.0505	0.01 U	0.005 U	0.01 U	0.01 U	0.005 U	0.01 U	0.01 U	0.01 U	0.005 U

Preliminary Screening Levels:

- (a) Oregon Screening Level Values (SLVs), surface water - aquatic and Oregon Ambient Water Quality Criteria (AWQC), Tables 20 and 33A, fresh water, acute.
 (b) Oregon AWQC, Tables 20 and 33A, fish consumption only and National Recommended Water Quality Criteria, organism only.
 (c) Oregon Screening Level Values (SLVs) - surface water, aquatic.
 (d) Oregon Department of Environmental Quality Risk-Based Concentration, Groundwater in Excavation, Construction and Excavation Worker ("Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites", ODEQ, September 22, 2003).
 (e) Site-specific background concentrations (Phase I and II Contaminants of Potential Concern Screening Report, Time Oil Northwest Terminal, Landau Associates, September 10, 1999).
 (f) Oregon Screening Level Values (SLVs), surface water - aquatic and National Recommended Water Quality Criteria, fresh water chronic.
 (g) Oregon AWQC, fresh water acute and fresh chronic.

Notes:

Highlighted values are detected concentrations.

Outlined values are detected concentrations that exceed the minimum preliminary screening level.

Results are only shown for constituents where concentrations were detected in at least one of the riverbank and shoreline wells (except for pentachlorophenol). The results for the full set of analyzed constituents are included in the respective quarterly reports.

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TABLE 7-2
NAPL, SHEEN, AND ODOR OBSERVATIONS IN SOIL
TIME OIL NORTHWEST TERMINAL

Location	Depth (ft. bgs)			Presence of:		
				NAPL	Sheen	Odor
Main Terminal Tank Farm Area						
LW-27S	8	to	24	product at 22.5	no	slight diesel
LW-27S	8	to	24	no	no	strong diesel
LW-27S	24	to	44.5	no	no	faint diesel
LW-17D	0	to	16	no	no	mild petroleum-like
LW-17D	19	to	22	no	no	mild petroleum-like
LW-17D	22	to	27	no	heavy	strong petroleum-like
LW-17D	27	to	34	no	mild	strong petroleum-like
LW-17D	34	to	40	no	no	mild petroleum-like
LW-21S	4.5	to	17	no	moderate	strong diesel
LW-21S	17	to	17.5	no	no	mild diesel
LW-19S	7	to	16	no	no	strong diesel
LW-19S	16	to	18.5	no	slight	strong diesel
LW-19S	18.5	to	19	no	no	mild diesel
LW-20S	4	to	13.5	no	no	strong diesel
LW-20S	13.5	to	14.5	no	no	mild diesel
LW-20S	3.5	to	13.5	no	slight	strong diesel
LW-26D	3	to	15	no	no	slight diesel
LW-26D	15	to	24	no	slight	strong diesel
LW-26D	24	to	26.5	no	no	strong diesel
LW-26D	33	to	35	no	no	mild asphaltic
N	2	to	15	no	no	faint diesel-type
N	15	to	17	no	slight	faint diesel-type
N	17	to	18	no	no	faint diesel-type
P	0	to	14	no	no	strong gasoline
P	14	to	16	no	yes	strong gasoline
P	16	to	17.5	no	no	faint hydrocarbon
Q	0	to	14	no	no	strong gasoline
Q	14	to	17	no	yes	strong gasoline
G13-3	12	to	16	no	no	very strong petroleum
G13-3	5	to	12	no	no	strong petroleum
G9-1	8	to	16	no	no	very strong petroleum
G9-1	3	to	8	no	no	mild petroleum
G14-1	1	to	3.5	no	no	mild ethanol
G14-1	3.5	to	8	no	no	mild petroleum
G14-1	8	to	16	no	no	strong petroleum
LW-23D	27	to	29	no	no	slight to moderate petroleum-like
LW-23D	24	to	26	no	no	slight petroleum-like
LW-23D	26	to	27	no	no	moderate petroleum-like

TABLE 7-2
NAPL, SHEEN, AND ODOR OBSERVATIONS IN SOIL
TIME OIL NORTHWEST TERMINAL

Location	Depth (ft. bgs)			Presence of:		
				NAPL	Sheen	Odor
RW-2	19	to	42	no	no	slight to moderate hydrocarbon
LW-22D	25	to	30.5	no	no	slight petroleum-like
LW-4S	18	to	20	no	no	slight organic
LW-15D	25	to	40	no	no	mild petroleum-like
G2-2	22	to	24	no	no	mild petroleum
G3-1	12	to	16	no	no	mild petroleum
LW-24D	26	to	30	no	no	mild diesel
LW-8S	0	to	16.5	no	no	hydrocarbon
R	15	to	22	no	no	faint, sweet, soap-like
R	22	to	30	no	no	faint diesel-type
LW-4D	27.5	to	40.5	no	no	faint to moderate hydrocarbon
LW-4D	26	to	27.5	no	no	faint hydrocarbon
O	25	to	30	no	no	faint diesel-type
LW-25D	28.5	to	31.5	no	no	faint diesel
LW-6D	28	to	35	no	no	faint

Bell Terminal Tank Farm Area

LW-32D	14	to	17	no	slight	strong diesel
LW-32D	17	to	18	no	moderate	strong diesel
LW-32D	18	to	19	no	strong	strong diesel
LW-32S	15	to	20	no	moderate	slight diesel
G25-1	17	to	19.5	no	slight	no
LW-30D	12.5	to	16.5	no	no	strong petroleum-like
LW-30D	16.5	to	17.5	no	slight	strong petroleum-like
LW-30S	12.5	to	14	no	no	mild petroleum
LW-30S	14	to	17	no	no	strong petroleum
LW-30S	17	to	18	no	slight	strong petroleum
LW-30S	18	to	19	no	slight	mild petroleum
BT-05	16	to	19.5	no	trace	strong petroleum-like
BT-05	13	to	16	no	no	strong petroleum-like
BT-01	14	to	19.75	no	no	very strong petroleum-like
BT-01	12	to	14	no	no	strong petroleum-like
BT-03	13.5	to	17	no	no	strong petroleum-like
BT-03	17	to	20	no	no	mild petroleum-like
BT-06	14	to	18.5	no	no	strong petroleum-like
BT-08	15	to	19	no	no	strong petroleum-like

TABLE 7-2
NAPL, SHEEN, AND ODOR OBSERVATIONS IN SOIL
TIME OIL NORTHWEST TERMINAL

Location	Depth (ft. bgs)			Presence of:		
				NAPL	Sheen	Odor
BT-09	15.5	to	17	no	no	strong petroleum-like
G26-1	15	to	16	no	no	strong petroleum
LW-35D	28.5	to	29.5	no	no	mild rotten sewer-like
BT-02	16	to	19	no	no	mild petroleum-like
BT-04	14	to	24	no	no	mild petroleum-like
BT-07	15.5	to	19.5	no	no	mild petroleum-like
G21-1	17	to	20	no	no	mild petroleum
G22-1	15.5	to	16	no	no	mild petroleum
LW-31S	16.5	to	18.5	no	no	mild gasoline-like
LW-28S	13	to	13.5	no	no	mild ethanol-like
SCH-56	14	to	16	no	no	petroleum-like
SCH-56	16	to	18	no	yes	yes
SCH-56	18	to	20	no	no	slight
SCH-57	11.5	to	12	no	no	diesel
SCH-57	15	to	18.5	no	no	slight to moderate petroleum-like
SCH-59	12	to	14	no	no	moderate non-petroleum-like
SCH-59	14	to	17	no	no	moderate to strong
SCH-59	17	to	17.5	no	slight	strong
SCH-61	15.6	to	17.8	no	no	moderate to strong
SCH-63/63B	14.5	to	16	no	no	moderate to strong petroleum-like
	16	to	18	no	slight	petroleum-like
Phase II Study Area						
LB14	8	to	16	no	heavy	strong
LB14	16	to	18.5	no	slight	faint
LW-8S	16.5	to	17.5	no	medium	strong hydrocarbon
LW-2S	8	to	10	no	no	faint hydrocarbon
LW-2S	10	to	11	no	slight	faint hydrocarbon
LW-2S	11	to	17	no	moderate	moderate hydrocarbon
LW-2S	17	to	18	no	slight	moderate hydrocarbon
LB12	12	to	16	no	slight	slight to moderate
LB13	11	to	16	no	slight	slight to moderate
LB13	16	to	18	no	slight	slight
LB17	0.5	to	1.5	trace	slight	moderate
LB17	9	to	12	no	slight	moderate

TABLE 7-2
NAPL, SHEEN, AND ODOR OBSERVATIONS IN SOIL
TIME OIL NORTHWEST TERMINAL

Location	Depth (ft. bgs)			Presence of:		
				NAPL	Sheen	Odor
LB17	12.5	to	19.5	no	slight	no
LB2	6	to	9	no	slight	faint hydrocarbon
LB2	9	to	16	no	no	faint hydrocarbon
LB-25	12.5	to	17	no	slight	petroleum
RW-3	8.5	to	15.5	no	slight	strong mineral spirit
RW-3	15.5	to	17.5	no	no	slight mineral spirit
OX-8D	14	to	17	no	no	strong mineral spirit/PCP
OX-8S	13	to	17	no	no	strong mineral spirit/PCP
LW-11S	0	to	15	no	no	strong mineral spirit
LW-11D	0	to	15	no	no	strong mineral spirit
LW-12D1	0	to	16.5	no	no	strong hydrocarbon
LW-12D1	20	to	35	no	no	strong hydrocarbon
LW-12D2	0	to	16.5	no	no	strong hydrocarbon
LW-12D2	20	to	30	no	no	strong hydrocarbon
LW-12D2	90	to	100	no	no	slight to moderate hydrocarbon
LW-12D2	30	to	90	no	no	moderate hydrocarbon
LB-24	0	to	14	no	no	slight
LB3	4	to	14	no	no	moderate hydrocarbon
LW-3D	13	to	17	no	no	moderate hydrocarbon
OX-6S	15.5	to	18	no	no	mild mineral spirit/PCP
OX-7S	16	to	18	no	no	mild mineral spirit/PCP
LB-11	10	to	17.5	no	no	faint to moderate hydrocarbon
LB-5	1	to	9	no	no	faint hydrocarbon
LB-8	4	to	5	no	no	faint hydrocarbon

TABLE 7-3
LNAPL OBSERVATIONS AND MEASUREMENTS IN GROUNDWATER
AUGUST 1993 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	Observations
Upper Zone Groundwater Monitoring Wells:				
N	03/25/1997	11:48	----	
N	03/31/1997	08:59	----	Hydrocarbon odor, product
N	07/16/1997	07:20	1.20	Light brown color; thick coating on probe
N	10/21/1997	16:09	----	No product - strong petroleum odor
N	10/23/1997	17:20	----	No product - strong petroleum odor
N	01/27/1998	11:13	0.02	
N	05/18/1998	17:20	0.06	
N	08/17/1998	10:40	0.02	Thin coat of thick product
N	11/13/1998	09:48	0.01	
N	02/16/1999	12:55	0.27	Strong petroleum odor
N	05/18/1999	14:47	0.04	
N	09/21/1999	11:23	0.01	
N	12/06/1999	14:00	----	
N	02/16/2000	10:10	----	
N	05/23/2000	16:24	----	Strong petroleum odor, no product
N	08/29/2000	13:07	----	
N	11/09/2000	12:26	0.03	
N	02/12/2001	15:49	----	
N	06/04/2001	11:31	----	
N	08/16/2001	10:29	----	Trace product
N	11/28/2001	11:27	----	Trace product
N	02/27/2002	13:25	----	
N	04/05/2002	08:09	----	
N	05/29/2002	00:00	----	
N	06/27/2002	14:12	----	
N	08/26/2002	15:56	----	
N	11/13/2002	07:27	0.03	Product present
N	02/11/2003	08:49	----	
N	05/08/2003	06:51	----	
N	08/27/2003	13:33	----	
N	10/23/2003	12:08	----	
N	02/19/2004	12:21	----	
N	06/09/2004	07:36	----	
N	08/10/2004	10:55	----	
N	11/18/2004	08:38	----	
P	03/25/1997	11:45	----	
P	03/31/1997	08:55	----	Hydrocarbon odor, product
P	07/16/1997	07:15	0.17	Light coating on probe; light brown color
P	10/21/1997	16:05	----	No product - strong petroleum odor
P	10/23/1997	17:25	----	No product - strong petroleum odor
P	01/27/1998	11:09	----	
P	05/18/1998	17:18	----	Trace of product on probe
P	08/17/1998	10:37	0.01	Sheen on probe, strong petroleum odor
P	11/13/1998	09:46	0.05	Strong gasoline odor
P	02/16/1999	12:52	0.06	Strong petroleum odor
P	05/18/1999	14:43	0.13	
P	09/21/1999	11:20	0.01	
P	12/06/1999	13:55	----	
P	02/16/2000	10:08	----	
P	05/23/2000	16:21	----	Trace of product on surface
P	08/29/2000	13:04	0.01	
P	11/09/2000	12:24	0.03	
P	02/12/2001	15:46	----	
P	06/04/2001	11:27	----	Trace product
P	08/16/2001	10:28	----	
P	11/28/2001	11:24	----	
P	02/27/2002	13:22	0.10	Strong ethanol-like odor
P	04/05/2002	08:07	0.10	
P	05/29/2002	00:00	----	Trace product
P	06/27/2002	14:11	----	
P	08/26/2002	15:54	----	
P	11/13/2002	07:25	0.04	Product present
P	02/11/2003	08:44	0.01	Product present
P	05/08/2003	06:47	0.01	Trace product
P	08/27/2003	13:30	----	
P	10/23/2003	12:05	0.02	
P	02/19/2004	12:19	----	
P	06/09/2004	07:35	----	New reference elevation July 2004
P	08/10/2004	10:53	----	
P	11/18/2004	08:37	----	

TABLE 7-3
LNAPL OBSERVATIONS AND MEASUREMENTS IN GROUNDWATER
AUGUST 1993 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	Observations
Q	03/25/1997	11:42	----	
Q	03/31/1997	08:52	----	Hydrocarbon odor
Q	07/16/1997	07:10	0.02	Light coating on probe; light brown color
Q	10/21/1997	16:04	----	No product - strong petroleum odor
Q	10/23/1997	17:29	----	No product - strong petroleum odor
Q	01/27/1998	11:05	----	
Q	05/18/1998	17:16	----	
Q	08/17/1998	10:35	----	Slight sheen on probe; no product, strong petroleum odor
Q	11/13/1998	09:44	0.01	Strong gasoline odor
Q	02/16/1999	12:49	0.01	Strong petroleum odor
Q	05/18/1999	14:40	----	Strong odor when cap removed
Q	09/21/1999	11:17	----	
Q	12/06/1999	13:53	----	
Q	02/16/2000	10:06	----	Film of product
Q	05/23/2000	16:19	----	Strong petroleum odor, no product
Q	08/29/2000	13:01	----	
Q	11/09/2000	12:23	----	Trace of product
Q	02/12/2001	15:45	----	
Q	06/04/2001	11:25	----	
Q	08/16/2001	10:26	----	Trace product
Q	11/28/2001	11:21	0.42	
Q	02/27/2002	13:20	----	Strong petroleum odor, no product
Q	04/05/2002	08:05	----	Trace product
Q	05/29/2002	00:00	----	Trace product
Q	06/27/2002	14:10	----	Trace product
Q	08/26/2002	15:52	----	
Q	11/13/2002	07:30	0.01	Product present
Q	02/11/2003	08:47	----	
Q	05/08/2003	06:48	0.22	
Q	08/27/2003	13:28	----	
Q	10/23/2003	12:03	0.24	
Q	02/19/2004	12:17	----	Trace product
Q	06/09/2004	07:34	----	
Q	08/10/2004	10:52	----	
Q	11/18/2004	08:35	0.25	
LW007S	03/31/1997	11:05	----	
LW007S	07/16/1997	08:05	----	
LW007S	10/21/1997	16:45	----	
LW007S	01/27/1998	12:47	----	
LW007S	05/18/1998	17:48	----	
LW007S	08/17/1998	10:48	----	
LW007S	11/13/1998	10:12	----	Strong gasoline odor
LW007S	02/16/1999	13:53	----	
LW007S	05/18/1999	15:23	----	
LW007S	09/21/1999	12:03	----	
LW007S	12/06/1999	14:27	----	
LW007S	02/16/2000	10:46	----	
LW007S	05/23/2000	17:09	----	
LW007S	08/29/2000	13:53	----	
LW007S	11/09/2000	13:14	----	
LW007S	02/12/2001	15:39	----	
LW007S	06/04/2001	12:17	----	
LW007S	08/16/2001	11:33	----	
LW007S	11/28/2001	12:22	----	
LW007S	02/27/2002	14:15	----	
LW007S	03/05/2002	10:52	----	
LW007S	04/05/2002	08:57	----	
LW007S	05/29/2002	00:00	----	
LW007S	06/27/2002	14:45	----	
LW007S	08/26/2002	17:18	----	
LW007S	11/13/2002	09:16	----	
LW007S	02/11/2003	10:37	----	
LW007S	05/08/2003	08:27	----	
LW007S	08/27/2003	14:58	----	
LW007S	10/23/2003	13:39	----	
LW007S	02/19/2004	14:42	----	
LW007S	06/09/2004	09:25	----	
LW007S	08/10/2004	11:26	----	
LW007S	11/18/2004	08:55	----	
LW008S	05/18/1999	14:55	----	
LW008S	09/21/1999	12:24	----	
LW008S	12/06/1999	14:40	----	
LW008S	02/16/2000	10:16	----	

TABLE 7-3
LNAPL OBSERVATIONS AND MEASUREMENTS IN GROUNDWATER
AUGUST 1993 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	Observations
LW008S	05/23/2000	17:42	----	
LW008S	08/29/2000	14:26	----	
LW008S	11/09/2000	13:32	----	
LW008S	02/12/2001	15:58	----	
LW008S	06/04/2001	13:05	----	
LW008S	08/16/2001	12:00	----	
LW008S	11/28/2001	12:57	0.04	
LW008S	02/27/2002	14:37	----	
LW008S	03/05/2002	11:09	----	
LW008S	04/05/2002	08:17	----	
LW008S	05/29/2002	00:00	----	
LW008S	06/27/2002	15:21	----	
LW008S	08/26/2002	16:38	----	
LW008S	11/13/2002	08:50	----	
LW008S	02/11/2003	09:48	----	
LW008S	05/08/2003	08:00	----	
LW008S	08/27/2003	14:25	----	
LW008S	10/23/2003	12:42	----	
LW008S	02/19/2004	15:03	----	
LW008S	06/09/2004	08:43	----	
LW008S	08/10/2004	12:05	----	
LW008S	11/18/2004	09:15	----	
LW011S	05/18/1999	15:10	----	
LW011S	09/21/1999	11:51	----	
LW011S	12/06/1999	15:05	----	
LW011S	02/16/2000	11:01	----	
LW011S	05/23/2000	11:01	----	
LW011S	08/29/2000	14:55	----	
LW011S	11/09/2000	13:36	0.37	First occurrence of product in well.
LW011S	02/12/2001	15:18	----	
LW011S	06/04/2001	13:12	----	
LW011S	08/16/2001	11:24	0.28	
LW011S	11/28/2001	12:51	----	Trace product
LW011S	02/27/2002	14:59	----	
LW011S	03/05/2002	11:40	----	
LW011S	04/05/2002	08:34	----	
LW011S	05/29/2002	00:00	----	
LW011S	06/27/2002	15:09	----	
LW011S	08/26/2002	16:48	----	
LW011S	11/13/2002	08:54	----	
LW011S	02/11/2003	10:03	----	
LW011S	05/08/2003	08:07	----	
LW011S	08/27/2003	14:36	----	
LW011S	10/23/2003	14:12	----	
LW011S	02/19/2004	14:02	----	
LW011S	06/09/2004	08:56	----	
LW011S	08/10/2004	12:08	----	
LW011S	11/18/2004	09:08	0.09	
LW021S	10/23/2003	12:16	----	
LW021S	02/19/2004	14:54	1.03	
LW021S	06/09/2004	07:44	0.11	
LW021S	08/10/2004	11:02	0.17	
LW021S	11/18/2004	08:43	0.11	
LW027S	10/23/2003	12:20	----	
LW027S	02/19/2004	12:44	0.69	
LW027S	06/09/2004	07:39	----	
LW027S	08/10/2004	10:58	0.12	
LW027S	11/18/2004	07:39	0.02	
PZ2	06/27/2002	15:18	----	
PZ2	08/26/2002	16:34	----	
PZ2	11/13/2002	08:25	----	
PZ2	02/11/2003	09:44	----	
PZ2	05/08/2003	07:45	----	
PZ2	08/27/2003	14:03	----	
PZ2	10/23/2003	13:21	0.06	
PZ2	02/19/2004	13:50	----	
PZ2	06/09/2004	08:33	----	
PZ2	08/10/2004	12:02	----	
PZ2	11/18/2004	09:20	----	
OX001S	06/27/2002	15:13	----	
OX001S	08/26/2002	16:45	----	

TABLE 7-3
LNAPL OBSERVATIONS AND MEASUREMENTS IN GROUNDWATER
AUGUST 1993 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	Observations
OX001S	11/13/2002	08:30	----	
OX001S	02/11/2003	09:59	----	
OX001S	05/08/2003	08:04	----	
OX001S	08/27/2003	14:38	----	
OX001S	10/23/2003	14:09	----	
OX001S	02/19/2004	14:10	----	
OX001S	06/09/2004	08:45	----	
OX001S	08/10/2004	12:07	----	
OX001S	11/18/2004	09:07	0.03	
OX002S	06/27/2002	15:12	----	
OX002S	08/26/2002	16:44	----	
OX002S	11/13/2002	08:33	----	New reference elevation September 2002
OX002S	02/11/2003	10:06	----	
OX002S	05/08/2003	08:09	----	
OX002S	08/27/2003	14:33	----	
OX002S	10/23/2003	14:14	0.31	
OX002S	02/19/2004	14:07	----	
OX002S	06/09/2004	08:52	----	New reference elevation July 2004
OX002S	08/10/2004	12:09	----	
OX002S	11/18/2004	09:10	0.13	
OX003S	06/27/2002	15:14	----	
OX003S	08/26/2002	16:42	----	
OX003S	11/13/2002	08:31	----	
OX003S	02/11/2003	09:58	----	
OX003S	05/08/2003	08:03	----	
OX003S	08/27/2003	14:40	----	
OX003S	10/23/2003	14:10	----	
OX003S	02/19/2004	14:09	----	
OX003S	06/09/2004	08:51	----	
OX003S	08/10/2004	12:06	----	
OX003S	11/18/2004	09:13	0.33	
Deep Wells:				
B2	08/11/1993	10:02	----	Slight sheen, slight to mod mineral spirits-like odor
B2	10/26/1993	13:32	----	
B2	11/17/1993	13:32	----	
B2	12/17/1993	12:59	----	
B2	01/17/1994	13:12	----	
B2	02/18/1994	14:20	----	
B2	03/18/1994	12:59	----	
B2	04/18/1994	14:42	----	
B2	05/18/1994	15:22	----	
B2	06/17/1994	14:54	----	
B2	07/19/1994	09:20	----	
B2	08/17/1994	07:35	----	
B2	09/16/1994	07:27	----	
B2	10/17/1994	09:03	----	
B2	11/21/1994	11:51	----	
B2	12/19/1994	11:10	----	
B2	01/18/1995	11:18	----	
B2	02/21/1995	13:23	----	
B2	03/21/1995	13:05	----	
B2	04/19/1995	12:48	----	
B2	05/19/1995	13:38	----	
B2	07/17/1995	13:55	----	
B2	08/22/1995	07:53	----	
B2	09/22/1995	08:28	----	
B2	11/20/1995	07:57	----	
B2	12/01/1995	08:29	----	
B2	12/19/1995	07:26	----	
B2	01/19/1996	08:38	----	
B2	02/20/1996	10:42	----	
B2	03/19/1996	09:23	----	
B2	04/19/1996	11:53	----	
B2	07/22/1996	14:24	----	
B2	08/20/1996	14:20	----	
B2	09/24/1996	08:11	----	
B2	10/28/1996	11:09	----	
B2	12/13/1996	10:47	----	
B2	03/25/1997	12:02	----	
B2	03/31/1997	09:27	----	
B2	07/16/1997	07:45	----	
B2	10/21/1997	16:30	----	

TABLE 7-3
LNAPL OBSERVATIONS AND MEASUREMENTS IN GROUNDWATER
AUGUST 1993 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	LNAPL Thickness (ft)	Observations
B2	01/27/1998	12:06	----	
B2	05/18/1998	17:54	----	
B2	08/17/1998	10:23	----	
B2	11/13/1998	10:17	----	
B2	02/16/1999	13:34	----	
B2	05/18/1999	15:50	----	
B2	09/21/1999	12:18	----	
B2	12/06/1999	14:39	----	
B2	02/16/2000	10:56	----	
B2	05/23/2000	17:33	----	
B2	08/29/2000	14:20	----	
B2	11/09/2000	13:29	----	
B2	02/12/2001	15:27	----	
B2	06/04/2001	13:04	----	
B2	08/16/2001	11:58	----	
B2	11/28/2001	12:46	----	
B2	02/27/2002	14:35	----	
B2	06/27/2002	15:07	----	
B2	08/26/2002	17:01	----	
B2	11/13/2002	09:03	----	
B2	02/11/2003	10:14	----	
B2	05/08/2003	08:13	----	
B2	08/27/2003	15:32	----	
B2	10/23/2003	14:08	----	
B2	02/19/2004	14:12	----	
B2	06/09/2004	09:02	----	
B2	08/10/2004	08:50	----	
B2	08/10/2004	10:29	----	
B2	11/18/2004	08:13	----	

NM = Not measured.

NA = Not available.

-- No measurable product or odor observed.

* Well Point

Notes:

- (1) Reference Elevation (Ref. Elev) is the north side of the top of the 1.25-, 2- or 4-inch well casing, reference elevation surveys were conducted by Zarosinski-Tatone Engineers, Inc., Portland, Oregon. For the river gauge, the reference elevation was measured at a marked location on the south side of the dock on the Willamette River.
- (2) Depth to water (DTW) measured from surveyed reference elevation [see note (1)].
- (3) Where LNAPL thickness measured, groundwater elevation adjusted to account for the presence of LNAPL in the well using the method in " *Estimation of Free Hydrocarbon Volume from Fluid Levels in Monitoring Wells*" [Lenhard and Parker 1990; Groundwater 28(1):57-67].

**Volume II – Appendices
Final
Phase III Remedial Investigation Report
Time Oil Northwest Terminal
Portland, Oregon**

July 19, 2005

Prepared for

**Time Oil Co.
2737 West Commodore Way
Seattle, WA 98100-1233**

 **LANDAU
ASSOCIATES**
130 2nd Avenue South
Edmonds, WA 98020
(425) 778-0907

BZTO104(e)023024

Phase III RI Well Completion Logs

Soil Borings

BT-01

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 28.59 (MSL)	Water Level
0		1 █	d4		0	GP	GP	Brown, sandy GRAVEL (dry to moist) (no odor, no sheen)	
5		2 █	d4		0		SP	Brown, fine to medium SAND with gravel (moist) (no odor, no sheen)	
10								No gravel.	
15		3 █	b3		0				
20		4 █	b3		0				
25									
30		5 █	b3		820		SP	Brown, fine to medium SAND with trace silt (moist) (strong petroleum-like odor, no sheen)	
35							SP-SM	Gray, fine to medium SAND with silt (medium dense, wet) (very strong petroleum-like odor, no sheen)	▽ ATD
40		6 █	b3		1756				
45							ML	Gray SILT with fine sand	

Boring Completed 07/08/02
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



Time Oil NW Terminal
Portland, Oregon

Log of BT-01

Figure
2-2

BT-02

SAMPLE DATA						SOIL PROFILE			GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>28.13 (MSL)</u>	Water Level
		1	d4		0		GP	Brown, sandy GRAVEL (dry)	
		2	d4		0		SP	Brown, fine to medium SAND (moist) (no odor, no sheen)	
25									
5					0				
		3	b3						
20					0				
10		4	b3						
					0				
15								Becomes wet.	▽ ATD
15		5	b3						
							SP	Gray, fine to medium SAND (wet) (mild petroleum-like odor, no sheen)	
10		6	b3		231		SM	Gray, silty, fine to medium SAND (wet)	
							ML	Gray SILT with sand and wood debris (wet)	
20									

Boring Completed 07/08/02
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



Time Oil NW Terminal
Portland, Oregon

Log of BT-02

Figure
2-3

BZTO104(e)023028

BT-03

SAMPLE DATA						SOIL PROFILE		GROUNDWATER	
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™	
								Ground Elevation (ft): 28.32 (MSL)	
		1	d4		0		GP	Brown, sandy GRAVEL (dry)	
		2	d4		0		SP	Brown, fine to medium SAND (moist) (no odor, no sheen)	
25									
5					0				
		3	b3						
20					0				
10		4	b3						
15								Becomes wet	
		5	b3		791		SP-SM	Gray, fine to medium SAND with silt (wet) (strong petroleum-like odor, no sheen)	
15									
		6	b3		116		ML	Gray, sandy SILT (wet) (mild petroleum-like odor, no sheen)	
10									
20									

Boring Completed 07/08/02
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.

231009.39 5/19/03 NEDMAS/GINTGINTWPROJECTS231009.39.GPJ SOIL BORING LOG W/ ELEV



Time Oil NW Terminal
Portland, Oregon

Log of BT-03

Figure
2-4

BZTO104(e)023029

BT-04

SAMPLE DATA						SOIL PROFILE		GROUNDWATER
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>28.51 (MSL)</u> Water Level
1		1	d4		0	GP	GP	Brown, sandy GRAVEL (dry)
2		2	d4		0	SP	SP	Brown, fine to medium SAND (moist) (no odor, no sheen)
3		3	b3		0			
4		4	b3					
5		5	b3					
6		6	b3					
7		7	b3					
8		8	b3					
9		9	b3					
10								
15								
20								
25								
30								

Boring Completed 07/09/02
Total Depth of Boring = 28.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.













Time Oil NW Terminal
Portland, Oregon

Log of BT-04

Figure
2-5

BT-05

SAMPLE DATA						SOIL PROFILE			GROUNDWATER	
Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>28.40 (MSL)</u>	Water Level	
		1 	d4		0		GP	Brown, sandy GRAVEL (dry)	 ATD	
		2 	d4		0		SP	Brown, fine to medium SAND (moist) (no odor, no sheen)		
25					0					
5		3 	b3							
20		4 	b3		0					
10										
		5 	b3		413		SP	Gray, fine to medium SAND with trace silt (moist to wet) (strong petroleum-like odor, no sheen)		
15									Trace sheen.	
		6 	b3		864		ML	Wood debris from 18.5 ft to 18.9 ft.		
10										Gray, sandy SILT (wet)
20										

Boring Completed 07/08/02
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



Time Oil NW Terminal
Portland, Oregon

Log of BT-05

Figure
2-6

BT-06

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>28.94 (MSL)</u>	Water Level
1		1	d4		0		GP	Brown, sandy GRAVEL (dry)	
2		2	d4		0				
25							SP	Brown, fine to medium SAND (moist) (no odor, no sheen)	
5		3	b3		0				
20		4	b3		0				
15		5	b3		431		SP	Gray, fine to medium SAND with trace silt (moist) (strong petroleum-like odor, no sheen) Becomes wet at 15.5 ft.	▽ ATD
10		6	b	3	219		WD	Wood.	

Boring Completed 07/09/02
Total Depth of Boring = 19.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



Time Oil NW Terminal
Portland, Oregon

Log of BT-06

Figure
2-7

BZTO104(e)023032

BT-07

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)

Elevation

Sample Number
& Interval

Sampler Type

Blows/Foot

PID (ppm)

Graphic Symbol

USCS Symbol

Drilling Method: Geoprobe™
Ground Elevation (ft): 28.20 (MSL)

Water Level

1

d4

0

GP

Brown, sandy GRAVEL (dry)

2

d4

0

SP

Brown, fine to medium SAND (moist) (no odor, no sheen)

25

3

b3

0

20

4

b3

0

10

5

b3

0

15

6

b3

0

SP-SM

Becomes wet.
Gray, fine to medium SAND with silt (wet) (mild petroleum-like odor, no sheen)

ML

Gray SILT with fine sand (wet)

▽ ATD

Boring Completed 07/08/02
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



LANDAU
ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

Log of BT-07

Figure
2-8

BZTO104(e)023033

BT-08

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>28.11 (MSL)</u>	Water Level
0		1	d4		0		GP	Brown, sandy GRAVEL (dry)	
2		2	d4		0		SP	Brown, fine to medium SAND (dry to moist) (no odor, no sheen)	
5		3	b3		0				
10		4	b3		0				
15		5	b3		100				
20		6	b3		220		ML	Gray, SILT (moist)	

Boring Completed 07/08/02
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



Time Oil NW Terminal
Portland, Oregon

Log of BT-08

Figure
2-9

BT-09

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>28.04 (MSL)</u>	Water Level
0		1	d4		0		GP	Brown, sandy GRAVEL (dry)	
5		2	d4		0		SP	Brown, fine to medium SAND (moist) (no odor, no sheen)	
10		3	b3		0				
15		4	b3		0				
20		5	b3		0				
25		6	b3		176		ML	Gray SILT (wet) (no odor, no sheen)	

Boring Completed 07/09/02
Total Depth of Boring = 19.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



Time Oil NW Terminal
Portland, Oregon

Log of BT-09

Figure
2-10

BT-10

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Elevation	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™ Ground Elevation (ft): 28.62 (MSL)	Water Level
1		1	d4		0		GP	Brown, sandy GRAVEL (dry)	
2		2	d4		0				
25							SP	Brown, fine to medium SAND with trace silt (moist) (no odor, no sheen)	
5					0				
3		3	b3						
20					0				
4		4	b3						
10					0				
15		5	b3					Becomes wet.	▽ ATD
15									
6		6	b3		0		SP-SM	Gray, fine to medium SAND with silt (wet) (no odor, no sheen)	
10									
20							ML	Gray SILT with fine sand and wood debris (wet)	

Boring Completed 07/09/02
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



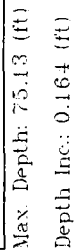
Time Oil NW Terminal
Portland, Oregon

Log of BT-10

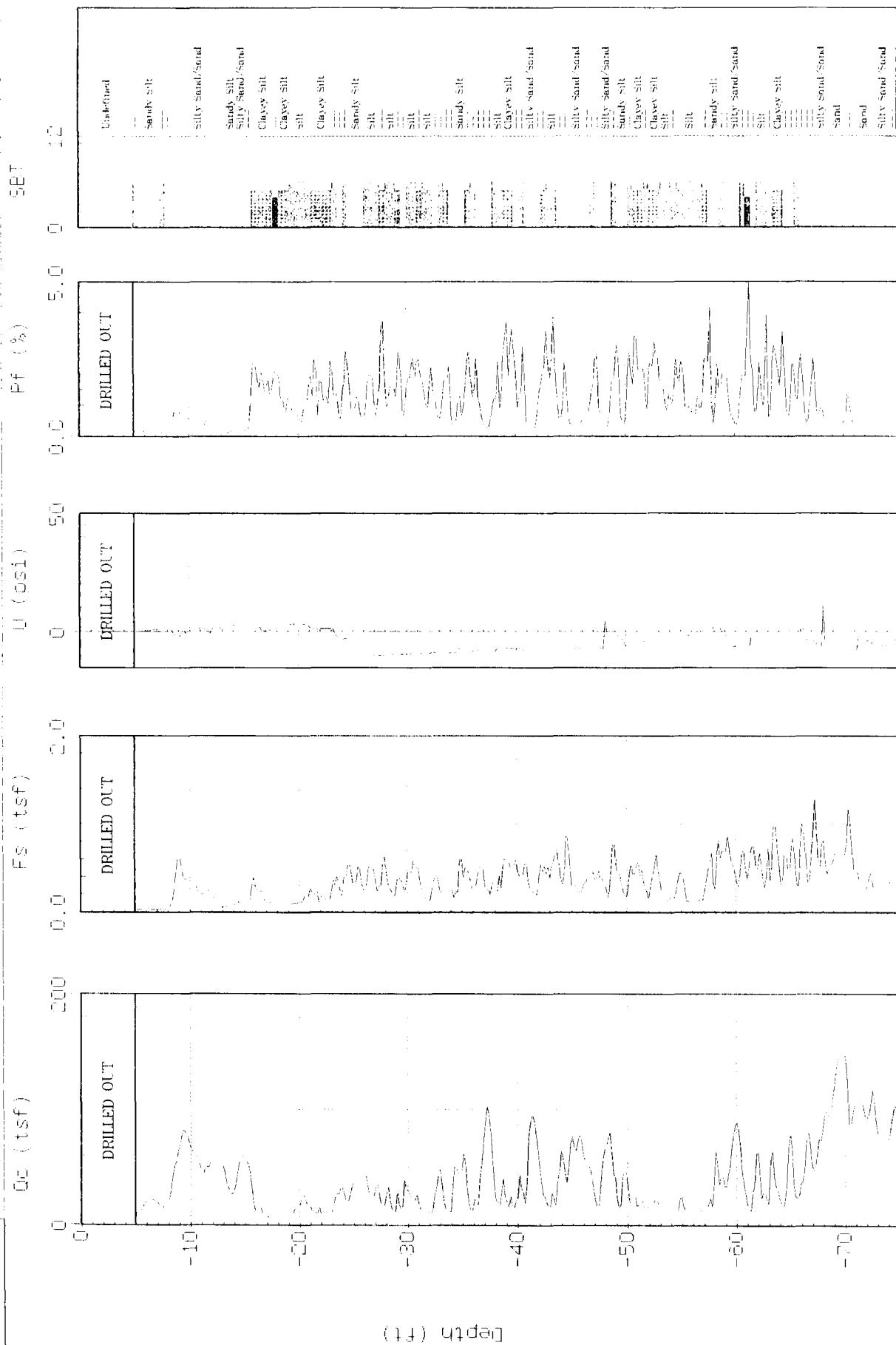
Figure
2-11

[illegible]

1. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .
 2. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .
 3. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .
 4. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .
 5. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .
 6. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .
 7. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .
 8. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .
 9. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .
 10. $\mathcal{H} = \mathcal{H}_1 \oplus \mathcal{H}_2$ and $\mathcal{H}_1, \mathcal{H}_2$ are invariant subspaces of \mathcal{H} under the action of \mathcal{H} .



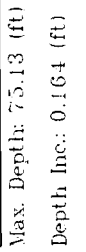
SEI: Soil Behavior Type (Robertson and Campanella 1988)

[illegible][illegible]

Max. Depth: 75.13 (ft)

Depth Inc.: 0.164 (ft)

SBE: Soil Behavior Type (Robertson and Campanella 1988)

[illegible][illegible]

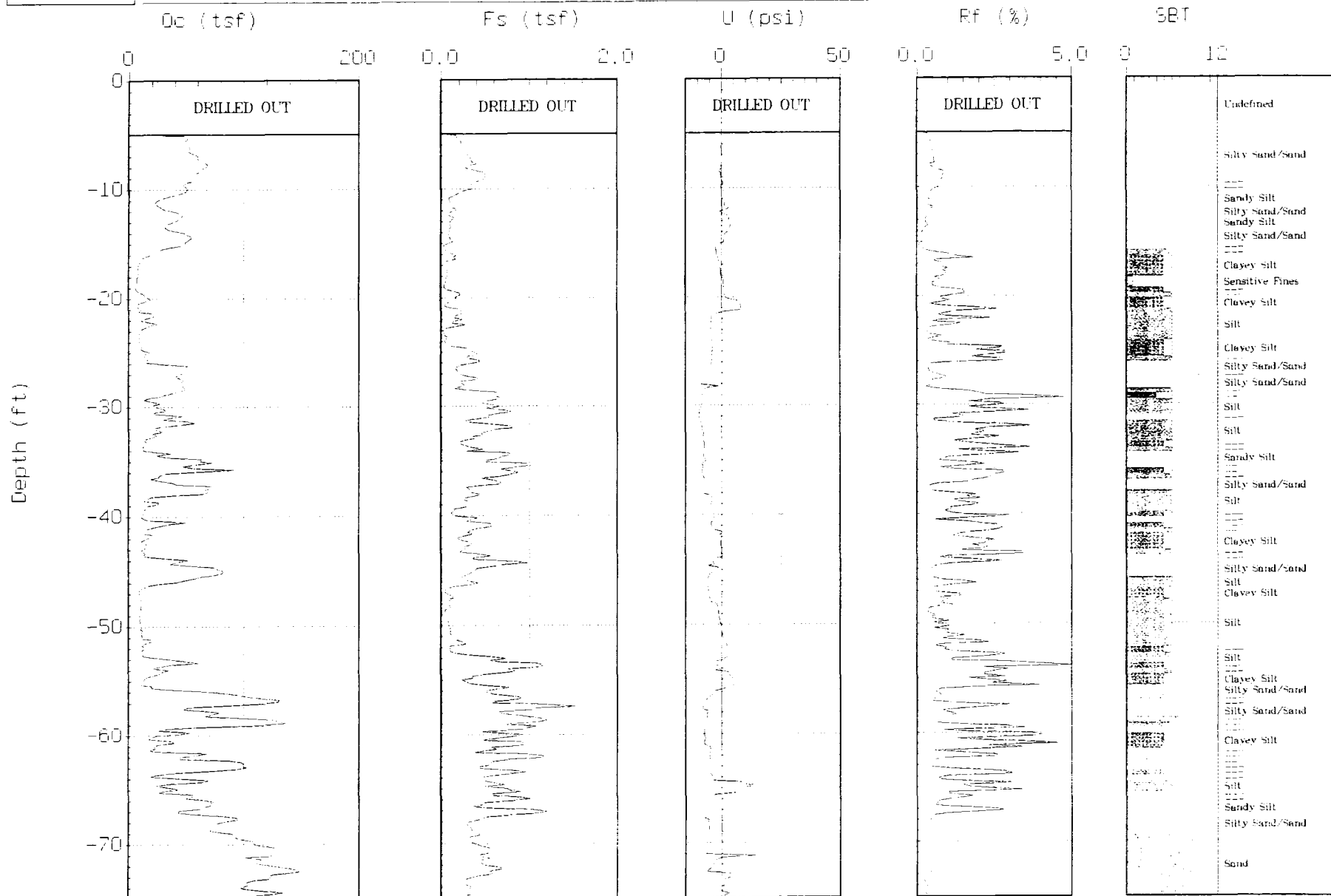
SBT Soil Behavior Type (Robertson and Campanella 1988)



TIME OIL CO.

Site : TUC REPPINHAL
Location : OCT 04

Geologist : CHRIS LINDALL
Date : 03-05-99 1:50

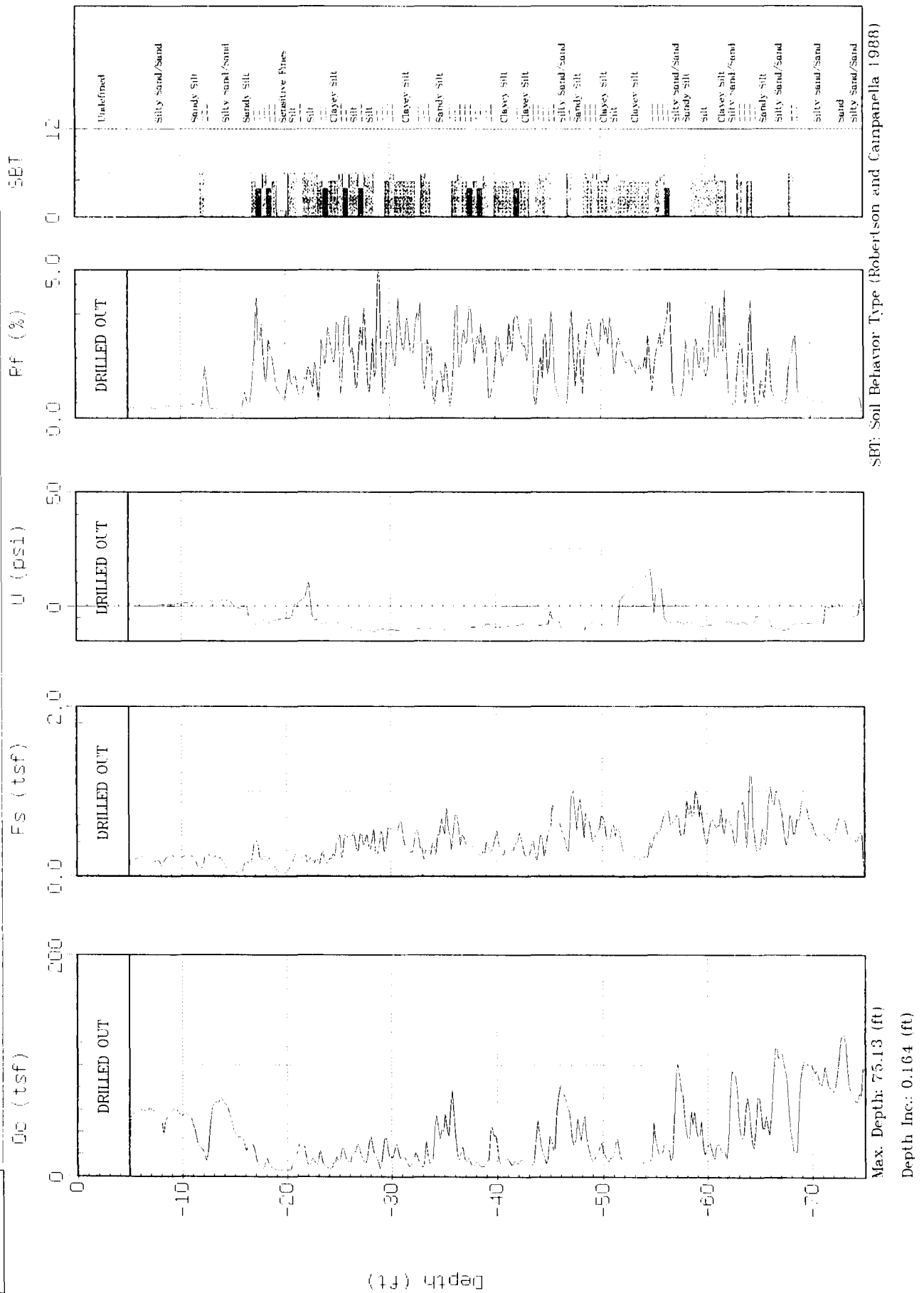


Max. Depth: 75.13 (ft)

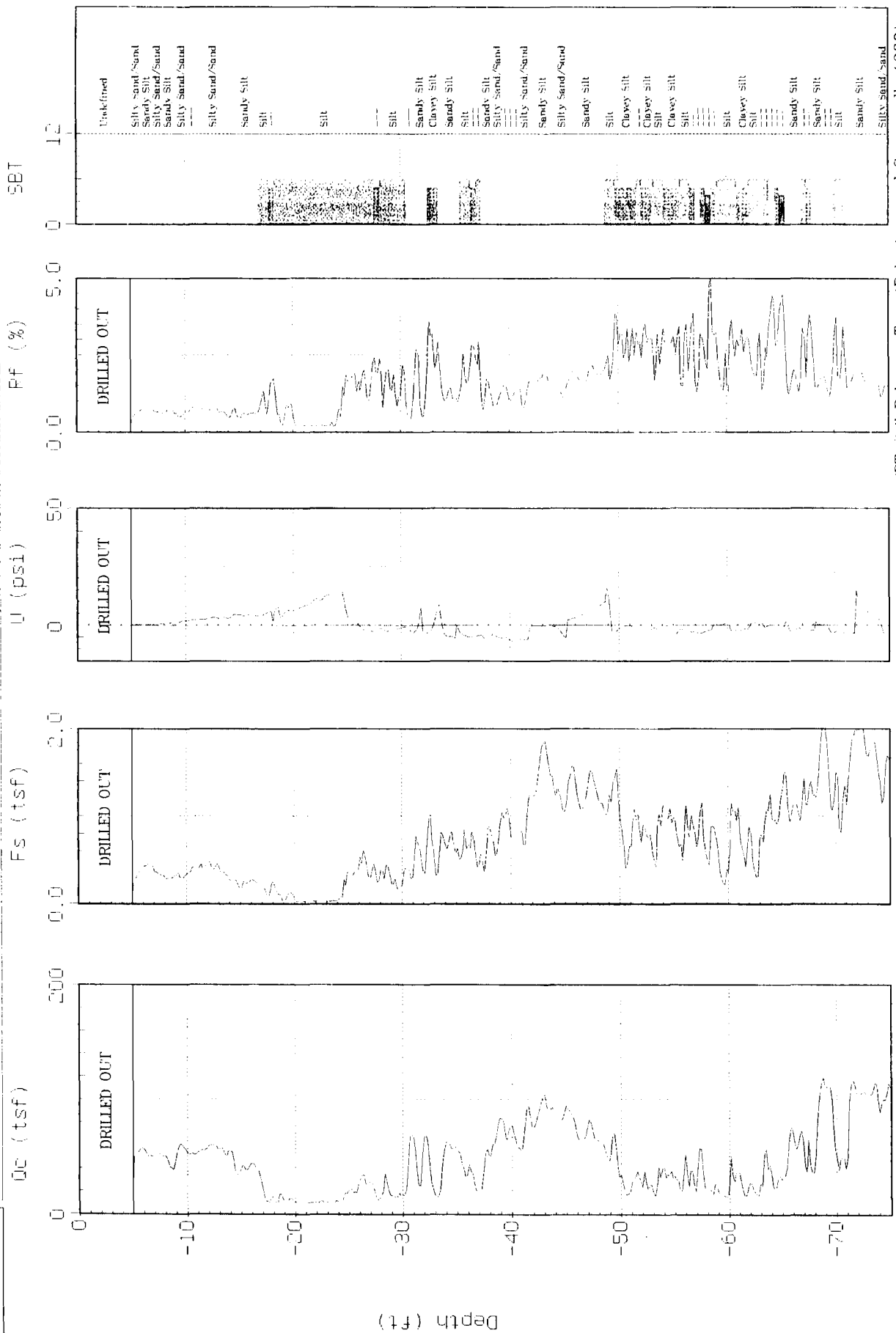
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

BZTO104(e)023040

[illegible][illegible]

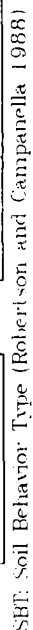
SBT: Soil Behavior Type (Robertson and Campanella 1988)

[illegible]
$$\begin{array}{l} \text{a)} \quad \frac{1}{2} \\ \text{b)} \quad \frac{1}{2} \\ \text{c)} \quad \frac{1}{2} \\ \text{d)} \quad \frac{1}{2} \\ \text{e)} \quad \frac{1}{2} \\ \text{f)} \quad \frac{1}{2} \\ \text{g)} \quad \frac{1}{2} \\ \text{h)} \quad \frac{1}{2} \\ \text{i)} \quad \frac{1}{2} \\ \text{j)} \quad \frac{1}{2} \\ \text{k)} \quad \frac{1}{2} \\ \text{l)} \quad \frac{1}{2} \\ \text{m)} \quad \frac{1}{2} \\ \text{n)} \quad \frac{1}{2} \\ \text{o)} \quad \frac{1}{2} \\ \text{p)} \quad \frac{1}{2} \\ \text{q)} \quad \frac{1}{2} \\ \text{r)} \quad \frac{1}{2} \\ \text{s)} \quad \frac{1}{2} \\ \text{t)} \quad \frac{1}{2} \\ \text{u)} \quad \frac{1}{2} \\ \text{v)} \quad \frac{1}{2} \\ \text{w)} \quad \frac{1}{2} \\ \text{x)} \quad \frac{1}{2} \\ \text{y)} \quad \frac{1}{2} \\ \text{z)} \quad \frac{1}{2} \end{array}$$


SBT: Soil Behavior Type (Robertson and Campanella 1988)

Max. Depth: 92.52 (ft)

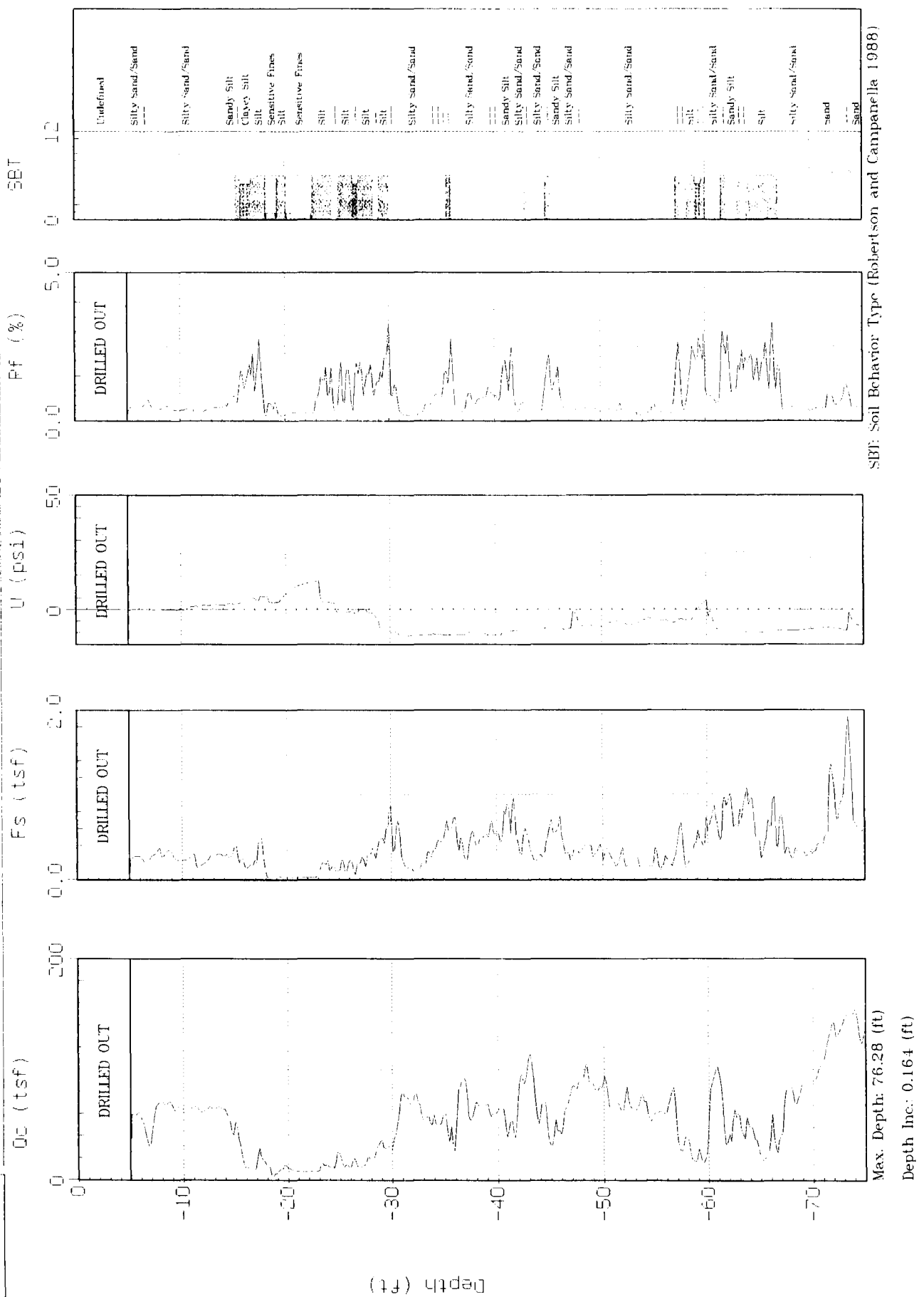
Depth Inc.: 0.164 (ft)



Depth Inc.: 0.164 (ft)

[illegible]

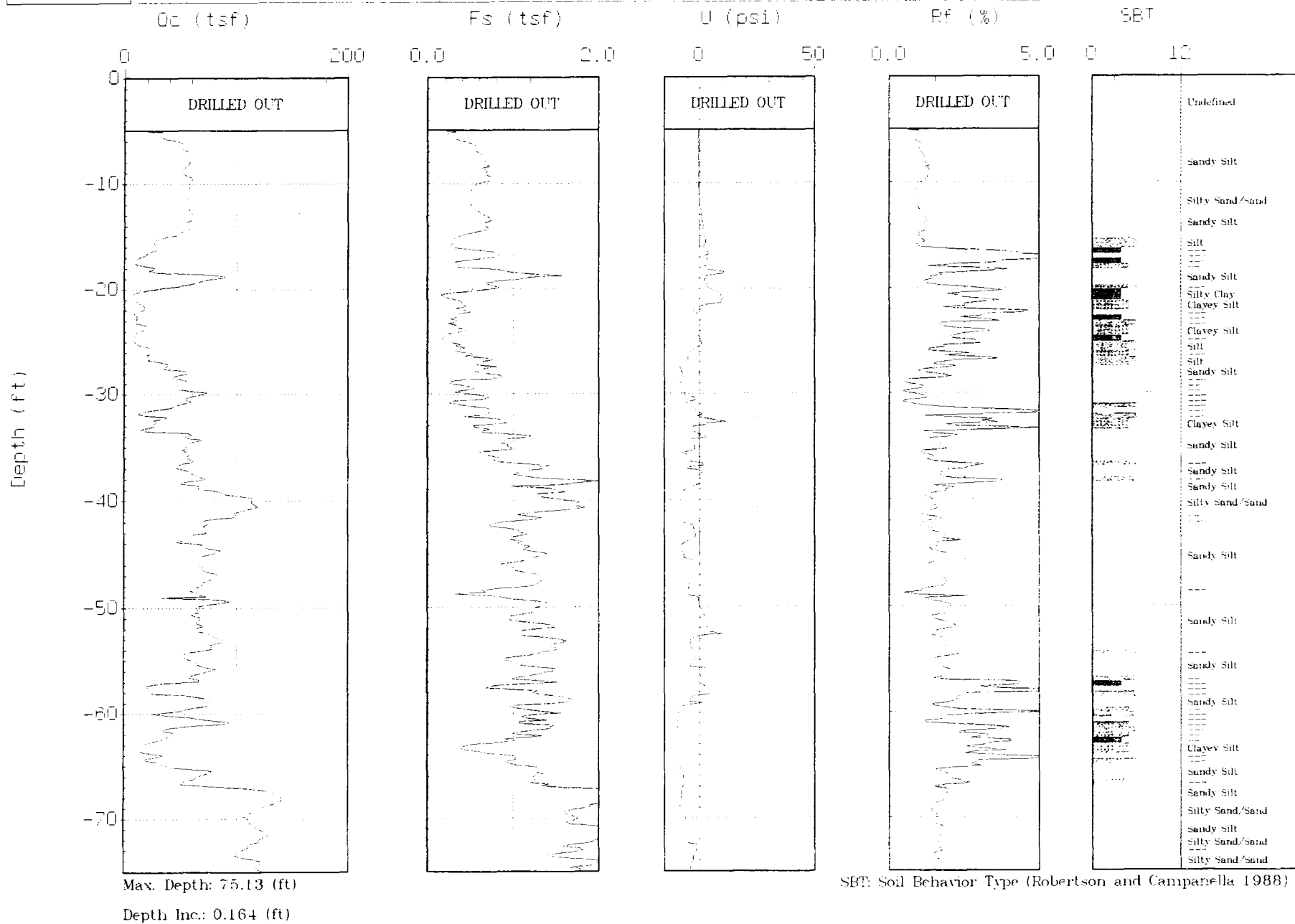
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 2. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
 3. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
 4. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
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 8. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
 9. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$
 10. $\frac{1}{2} \times \frac{1}{2} = \frac{1}{4}$



SBT: Soil Behavior Type (Robertson and Campanella 1988)



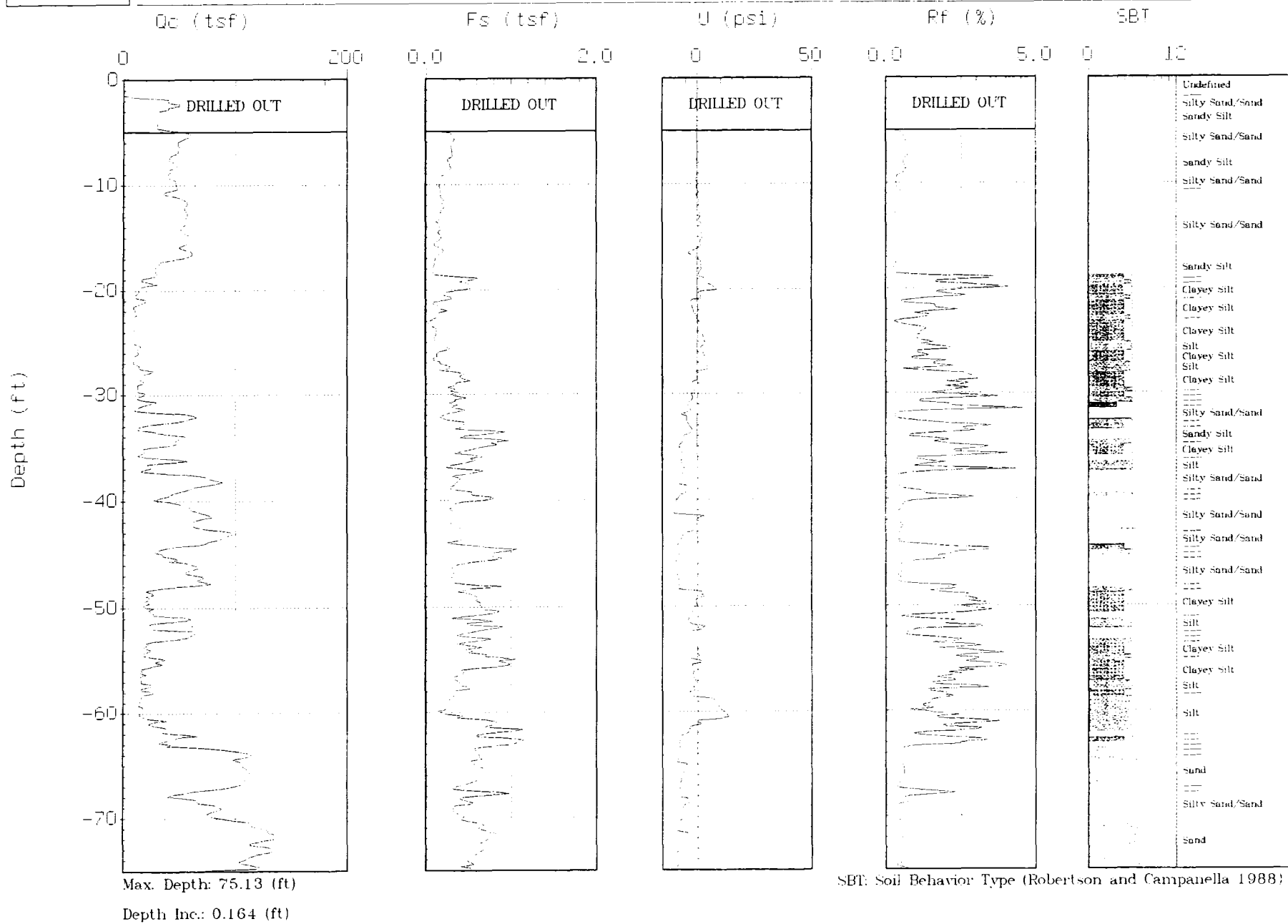
\mathbb{C}^n 上の n 個のベクトル v_1, \dots, v_n が基底であることは、 $\det(v_1, \dots, v_n) \neq 0$ であることと等しい。



BZTO104(e)023045



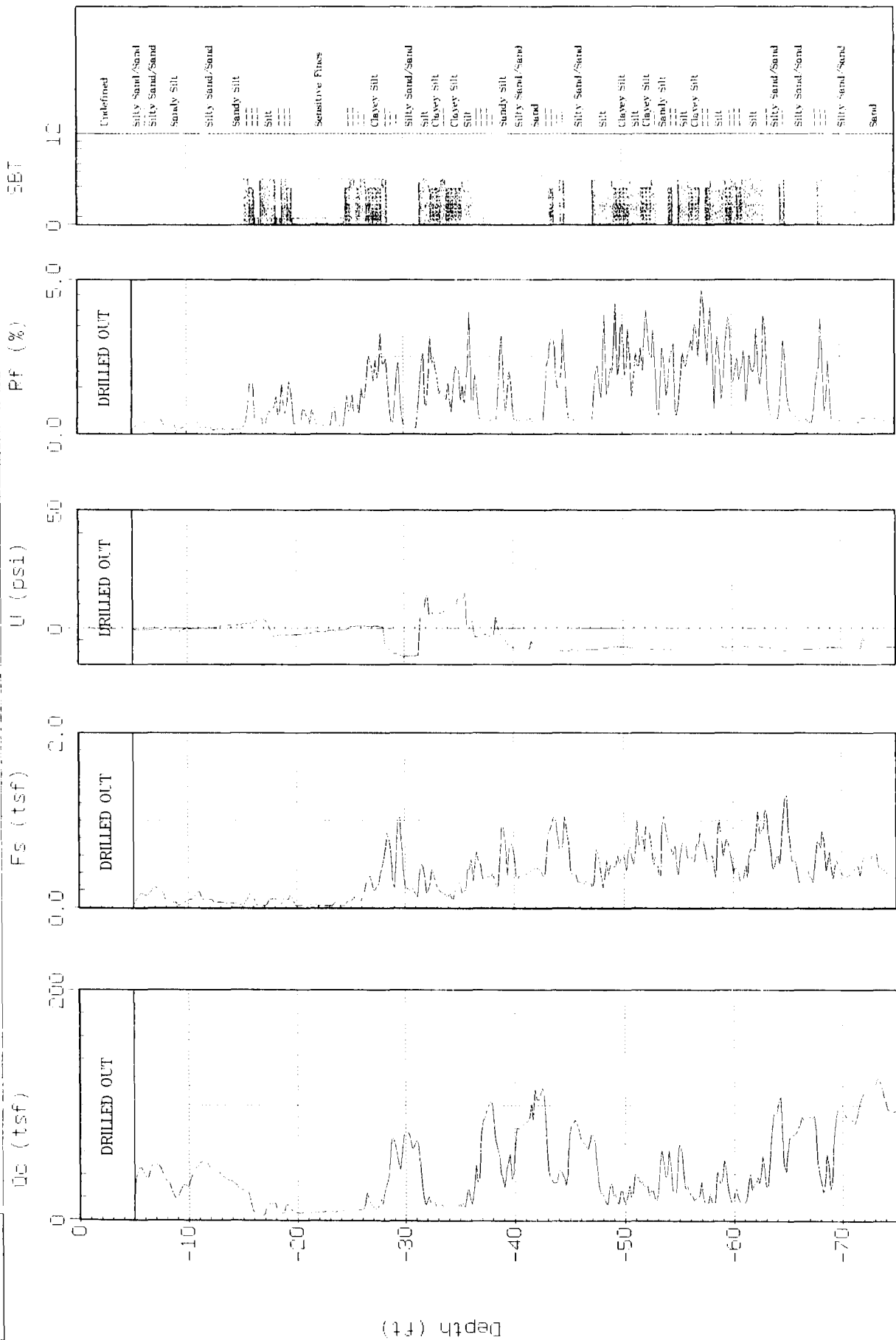
1. APPROVED : _____
 2. DATE : _____



BZTO104(e)023046



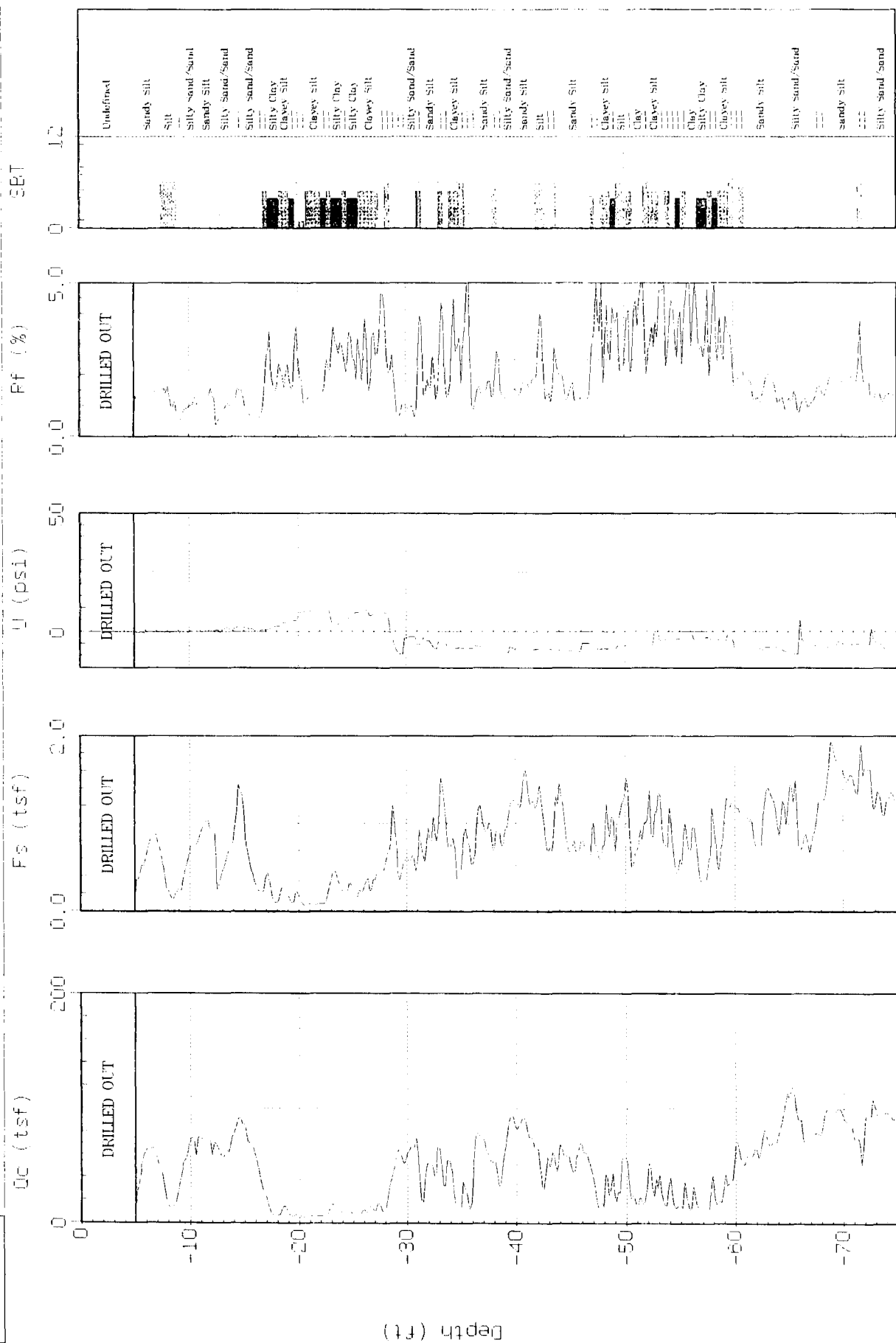
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[illegible]

Max. Depth: 75.13 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

[illegible][illegible]

Max. Depth: 74.80 (ft)

Depth Inc.: 0.164 (ft)

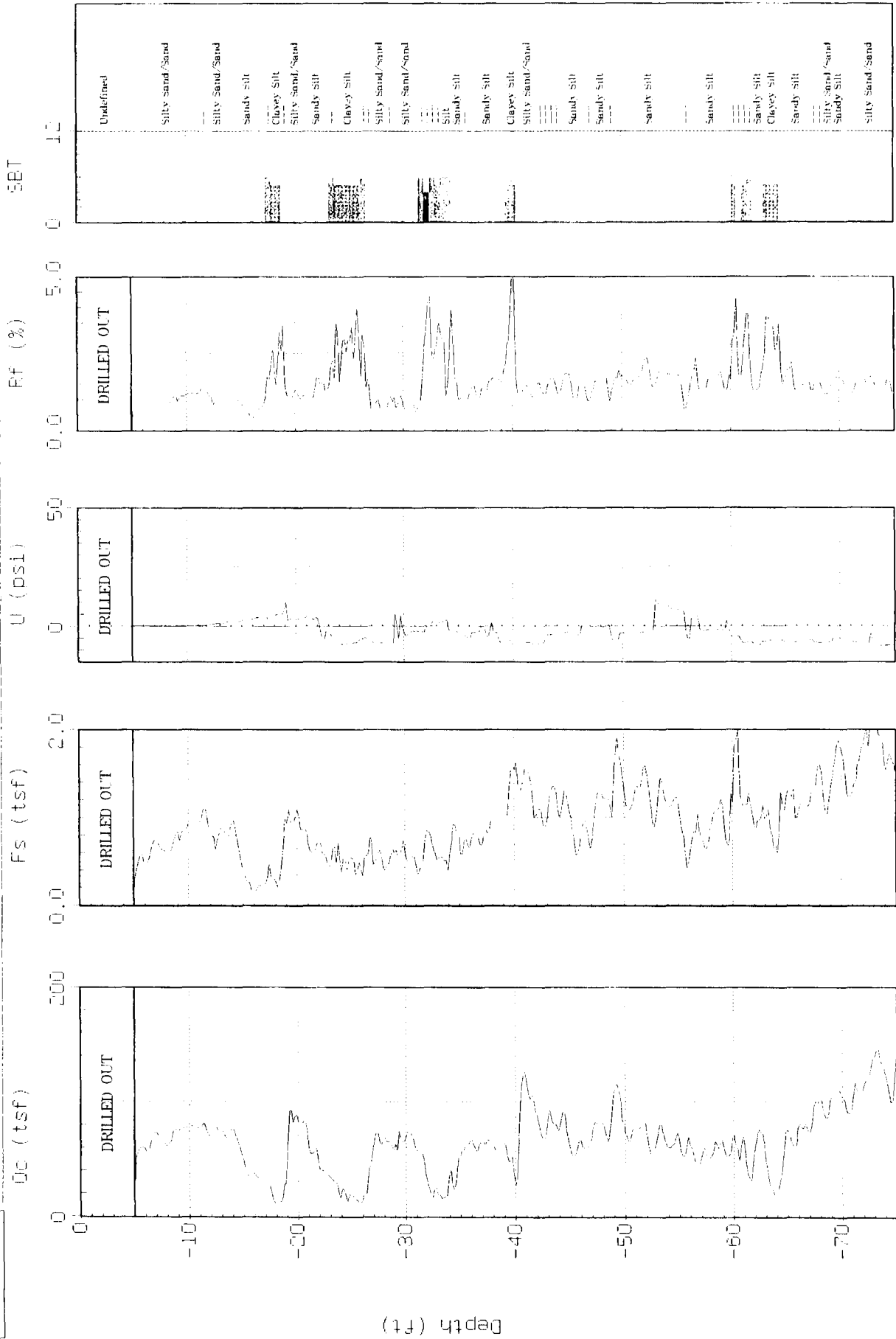
SBF: Soil Behavior Type (Robertson and Campanella 1988)



TIME OIL CO.

Site: 10. FETTERHILL
Location: 00000000

Geologist: LARRY CAMPBELL
Date: 03/03/93



SBT: Soil Behavior Type (Robertson and Campanella 1988)

Max. Depth: 100.06 (ft)

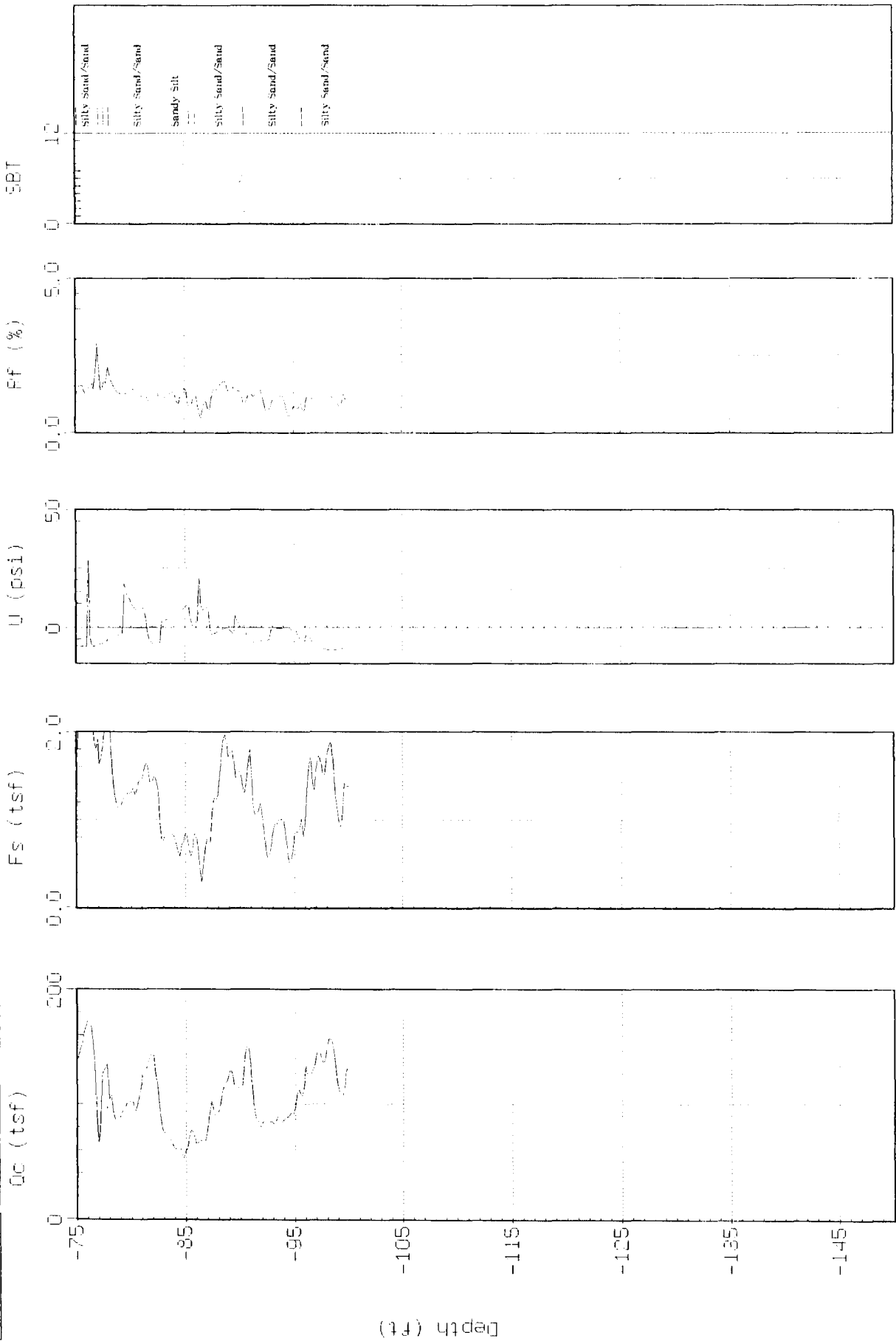
Depth Inc: 0.164 (ft)



TIME OIL CO.

Site: W. TERTIAL
Location: DEPT 11

Geologist: C. J. R. NIEL
Date: 07/11/98 09:00



Max. Depth: 100.06 (ft)

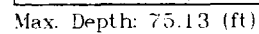
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)



DATE: 11-11-1961
PROJECT: JET-13

DECLASS : UNCLAS UNREL
DATE : DEC 2006 1407

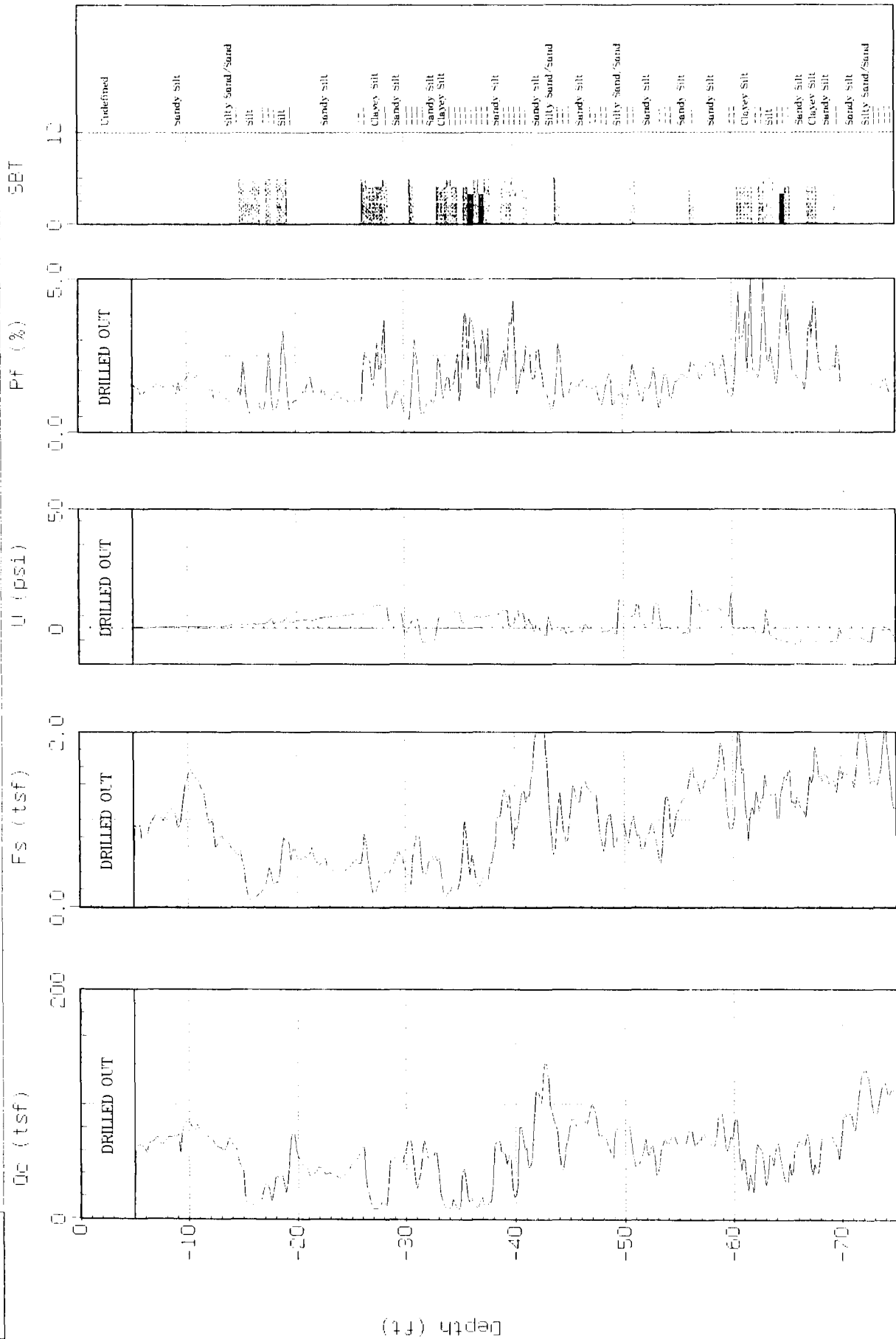


Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

[illegible]

$\frac{d}{dt} \left(\frac{\partial L}{\partial \dot{x}} \right) = - \frac{\partial L}{\partial x}$



Max. Depth: 75.13 (ft)

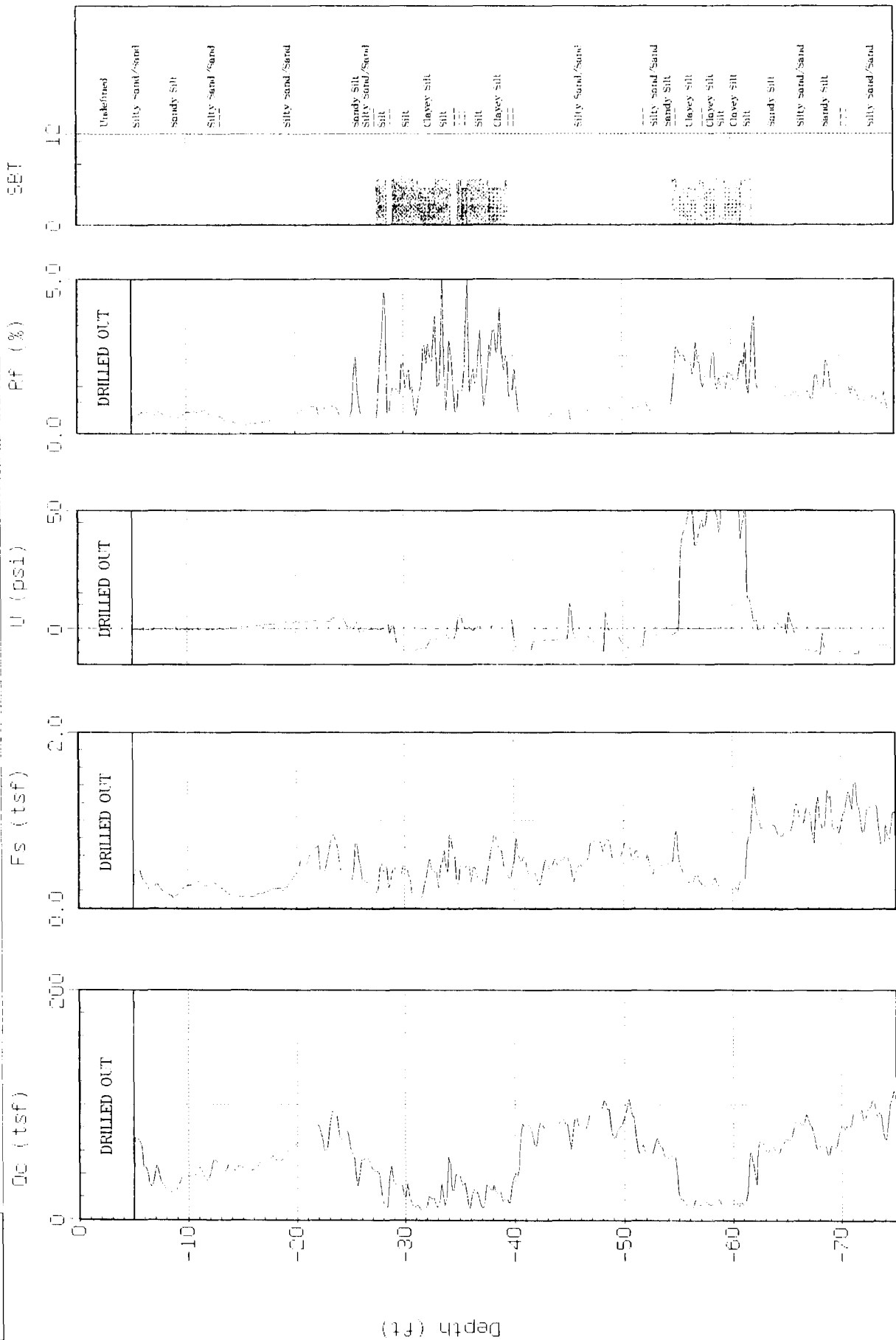
Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)



1	1
2	1
3	1
4	0
5	0
6	0
7	0
8	0
9	0
10	0
11	0
12	0
13	0
14	0
15	0
16	0
17	0
18	0
19	0
20	0
21	0
22	0
23	0
24	0
25	0
26	0
27	0
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29	0
30	0
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84	0
85	0
86	0
87	0
88	0
89	0
90	0
91	0
92	0
93	0
94	0
95	0
96	0
97	0
98	0
99	0
100	0

$\frac{1}{\sqrt{2}}$



Max. Depth: 75.13 (ft)

Depth Inc.: 0.164 (ft)

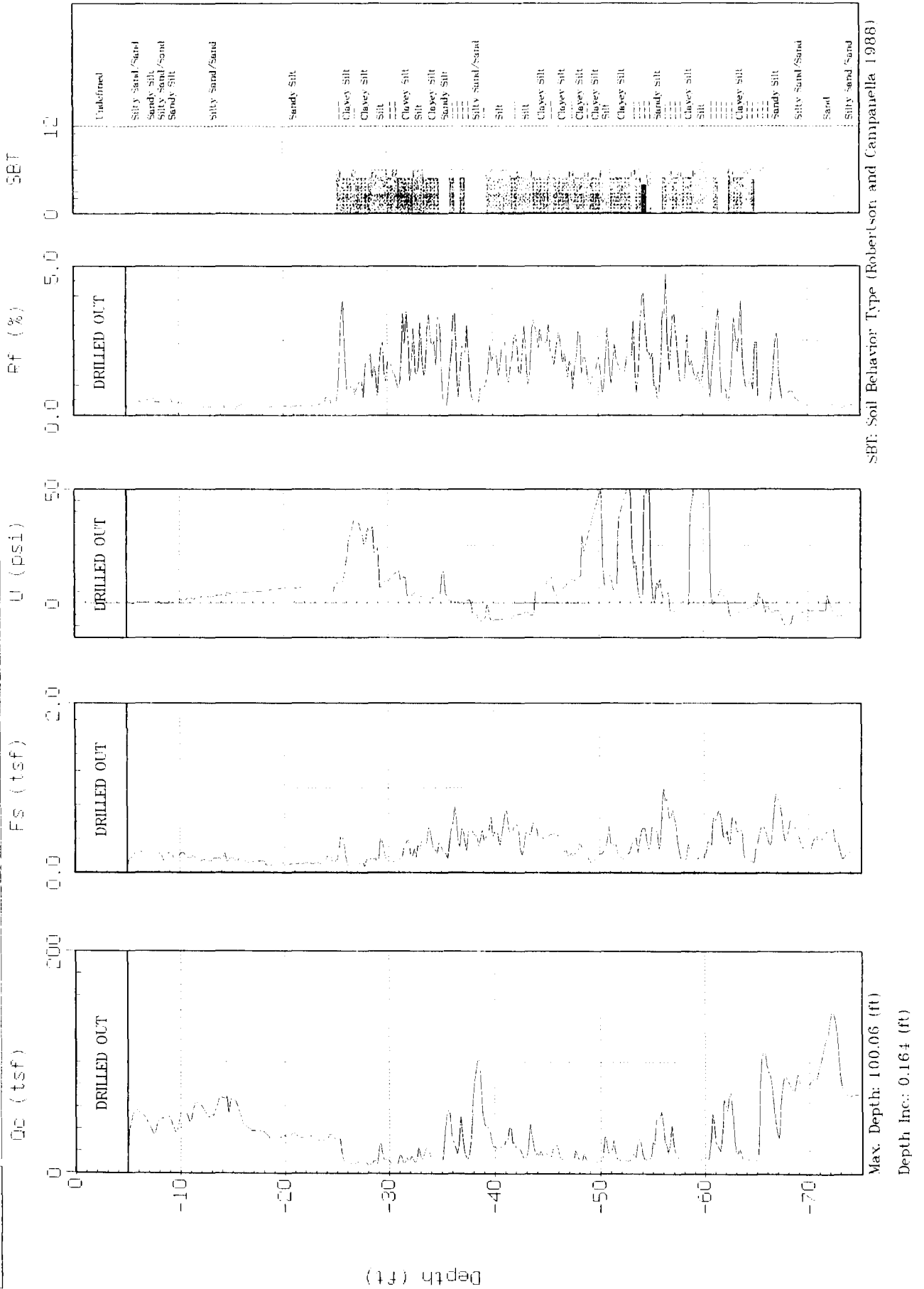
SBT: Soil Behavior Type (Robertson and Campanella 1988)



TIME OIL CO.

Site: 100.06
Location: 023054

Geologist: J. L. L. L.
Date: 02/09/88



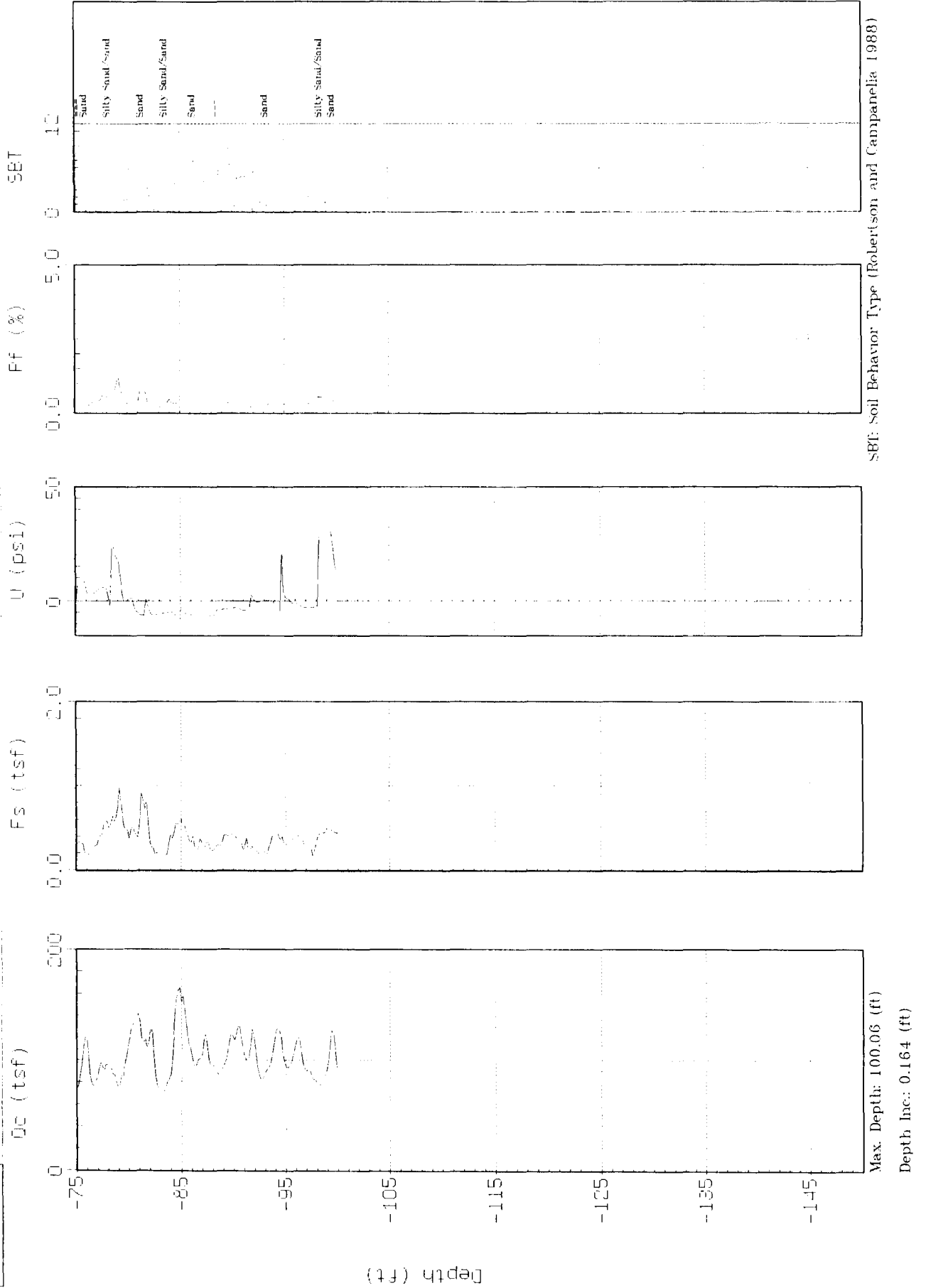
SBT: Soil Behavior Type (Robertson and Campanella 1988)



TIME OIL CO.

Site: 100 TERMINAL
Location: 08-116

Geologian: JHPIS, JOMIEL
Date: 03/11/99 09:00



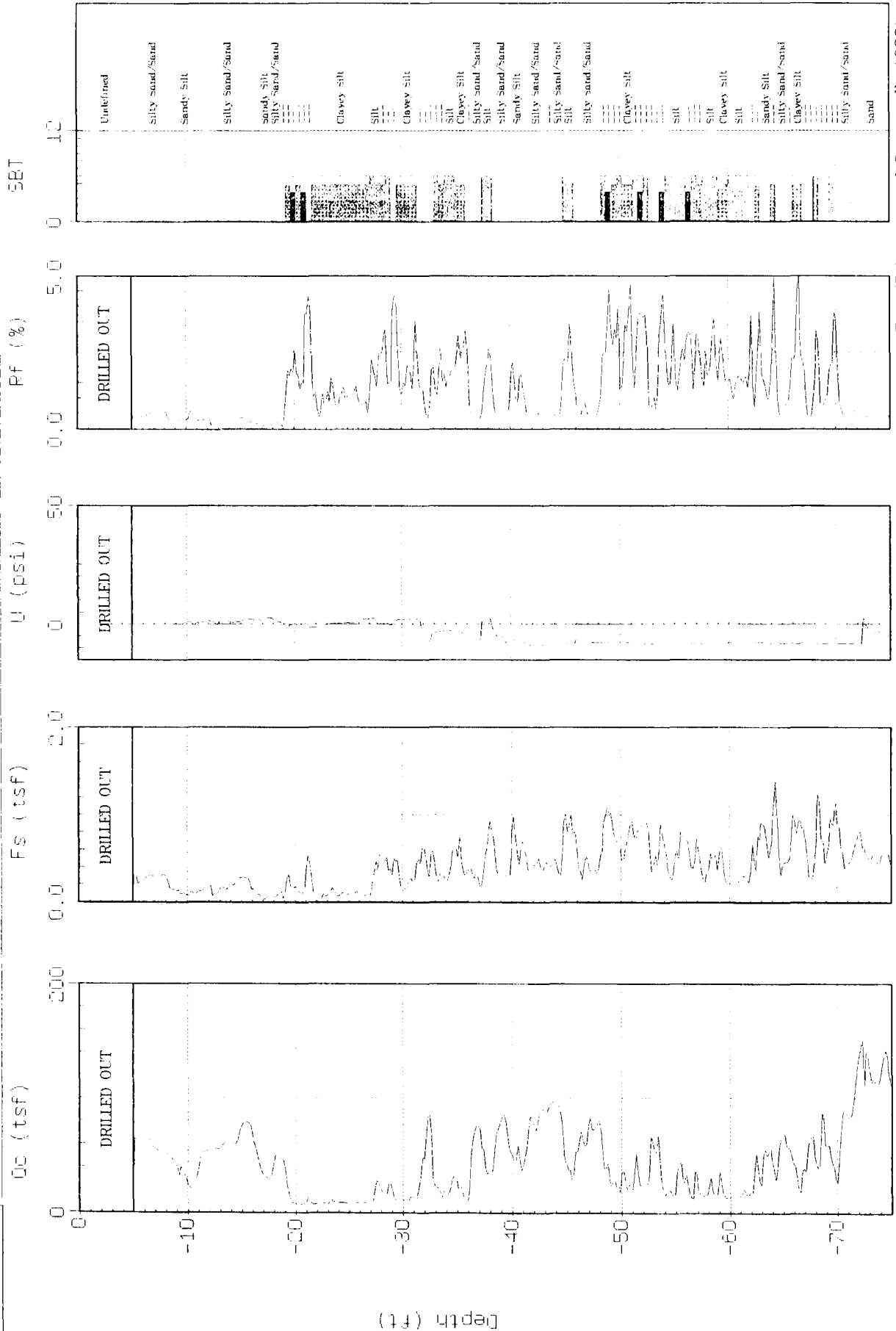
SBT: Soil Behavior Type (Robertson and Campanella 1988)



TIME OIL CO.

Site: 10. FERRIER
Location: 02101

Geologist: CHSIE, JUNE
Date: 03/17/96 10:11



Max. Depth: 100.06 (ft)

Depth Inc: 0.164 (ft)

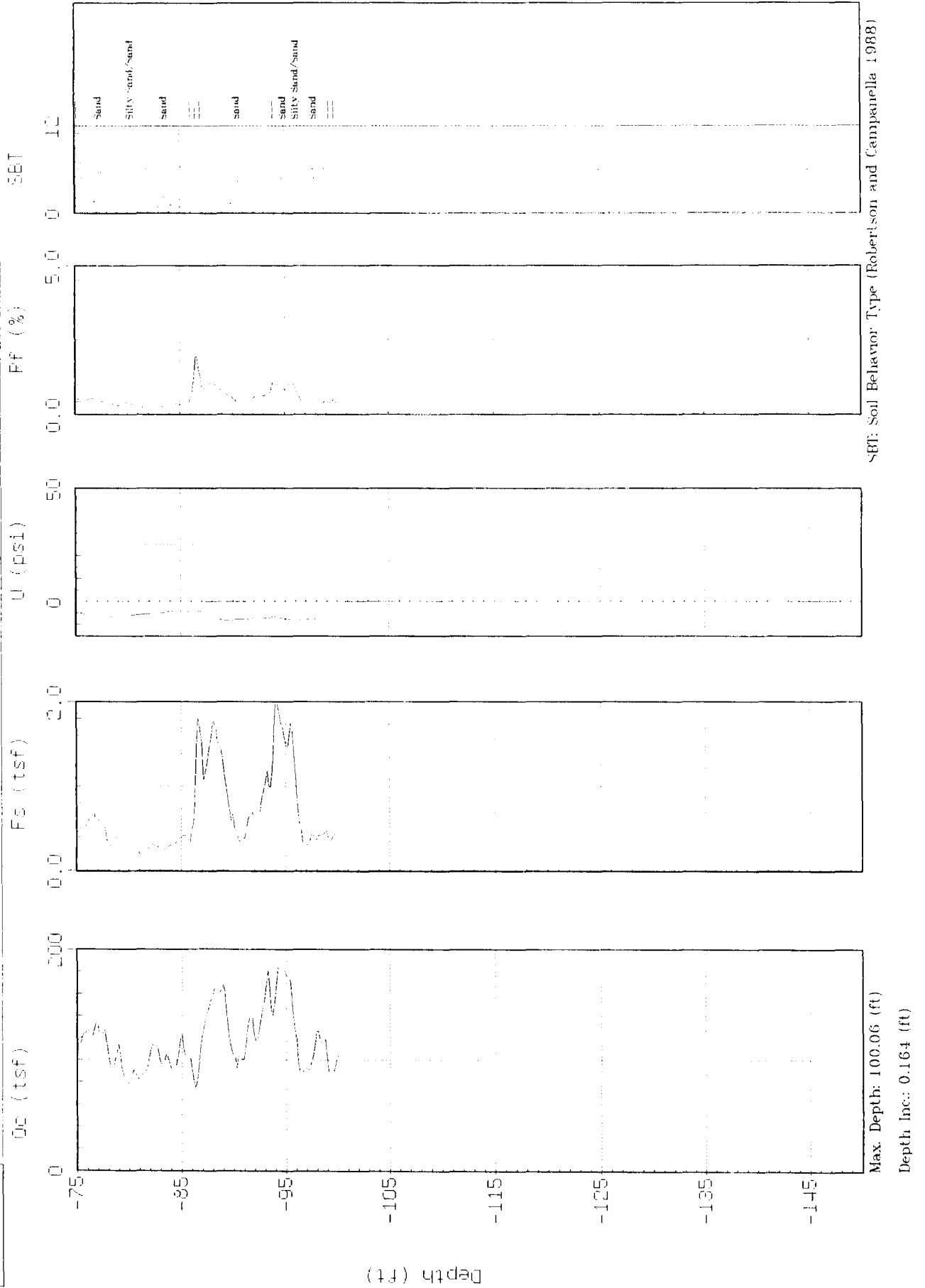
SBT: Soil Behavior Type (Robertson and Campanella 1988)



THE OIL CO.

Site: 100.06 (ft)
Location: 0.164 (ft)

Geological: 100.06 (ft)
Depth: 0.164 (ft)



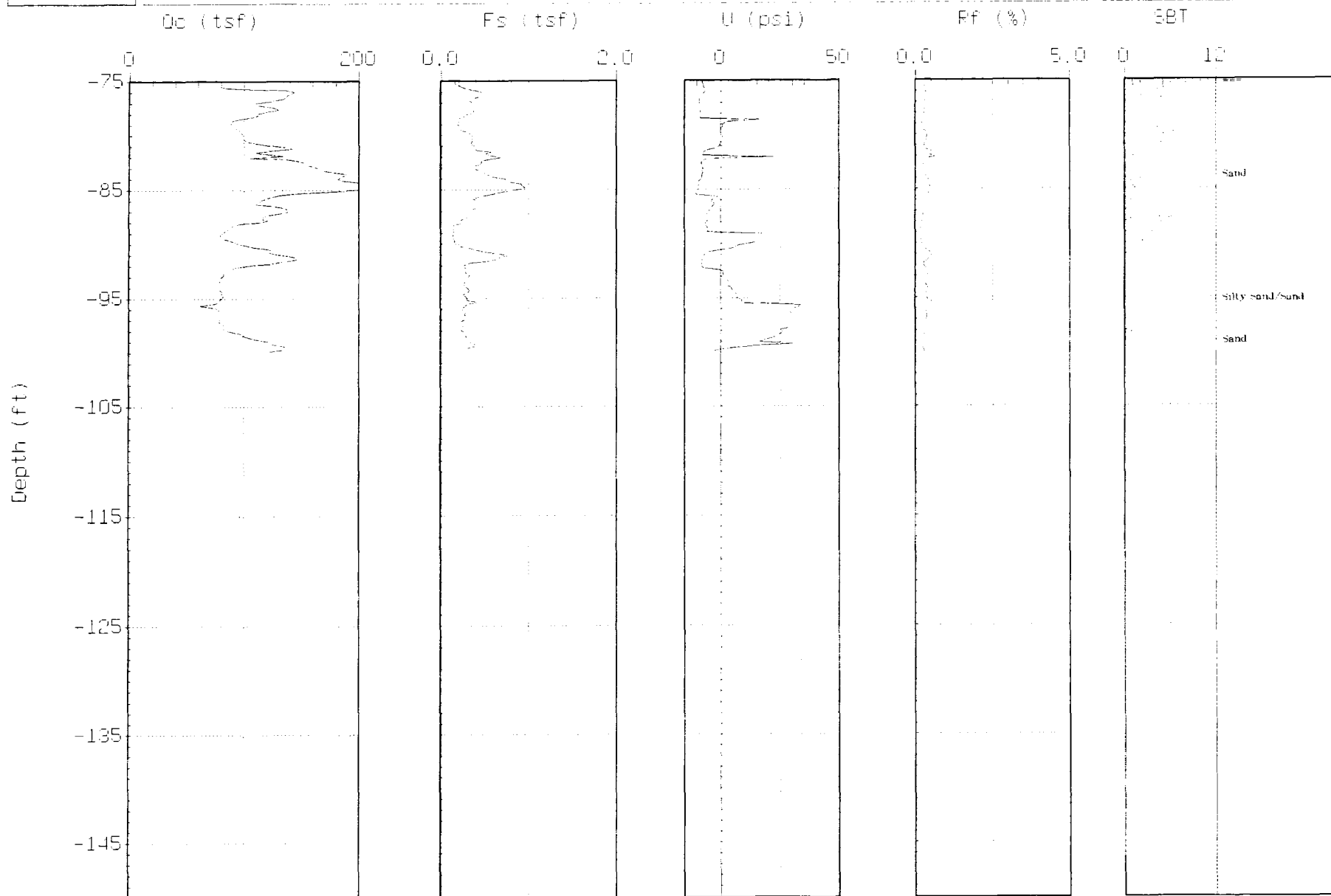
SBT: Soil Behavior Type (Robertson and Campanella 1988)



TIME OIL CO.

Site : W. REPTON-EL
Location : IPT-10

Geologist : JAHU-10
Date : 03/01/98 11:18

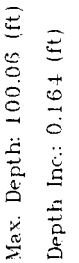


Max. Depth: 100.06 (ft)

Depth Inc.: 0.164 (ft)

SBT: Soil Behavior Type (Robertson and Campanella 1988)

BZTO104(e)023058

[illegible][illegible]

SBT: Soil Behavior Type (Robertson and Campanella 1988)

G1-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
0										
1	1	d4		0		AC	Asphalt			
						GP	Brown, sandy GRAVEL (moist, no odor, no sheen)			
						SP	Gray, fine SAND (moist, no odor, no sheen)			
						SP	Brown, fine to medium SAND (moist, no odor, no sheen)			
5				0						
2	2	b3								
10	3	b3		0						
				0						
15	4	b3								
							Becomes wet at 13 ft.			
										▽ ATD

Boring Completed 08/24/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231009.21 10/15/01 I:\MODELING\GINTPROJ\231009.GPJ SOIL BORING LOG

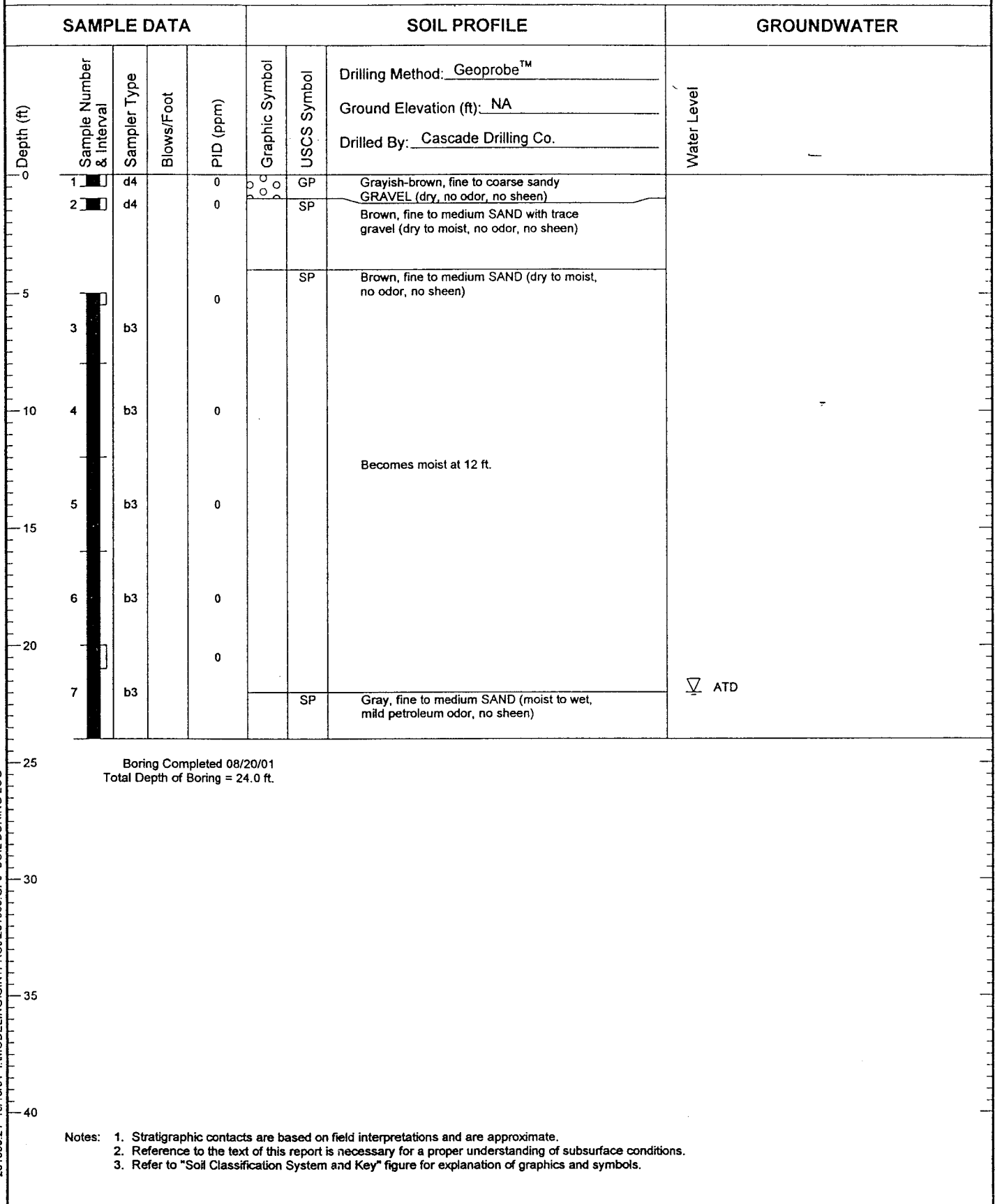


Log of Boring G1-1

Figure A-2

BZTO104(e)023060

G2-2



Log of Boring G2-2

Figure A-3

G3-1

SAMPLE DATA					SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
1	1	d4		0		GP	Brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)			
2	2	d4		0		SP				
5				0			Becomes moist at 5 ft.			
3		b3								
10	4	b3		0		SP	Gray, fine to medium SAND (moist, no odor, no sheen)			
				54			Becomes wet, mild petroleum odor at 12 ft.			
15	5	b3								▽ ATD

Boring Completed 08/20/01
Total Depth of Boring = 16.0 ft.









- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G3-1

Figure A-4

G4-1

SAMPLE DATA					SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
0	1 	d4		0		AC SP	Asphalt pieces Brown, fine to medium SAND (moist, no odor, no sheen)			
5	2 	b3		0						
10	3 	b3		0						
	4 	b3		1.5						 ATD
15						SP	Gray, fine to medium SAND, with wood debris at 15 - 15.5 ft. (wet, mild petroleum odor, no sheen)			

Boring Completed 08/23/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G4-1

Figure A-5

G5-3

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™	Water Level
							Ground Elevation (ft): NA	
							Drilled By: Cascade Drilling Co.	
0	1	d4		0		AC SP	Asphalt	
5	2	b3		0			Brown, fine to medium SAND (moist, no odor, no sheen)	
10	3	b3		0				
15	4	b3		0			Becomes wet at 13 ft.	▽ ATD

Boring Completed 08/24/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G5-3

Figure A-6

BZTO104(e)023064

G6-2

SAMPLE DATA					SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol		Water Level	
0							Drilling Method: Geoprobe™ Ground Elevation (ft): NA Drilled By: Cascade Drilling Co.		
1	1	d4		0	GP	GP	Grayish-brown, fine to medium sandy GRAVEL (dry to moist, no odor, no sheen)		
2	2	d4		0	SP	SP	Brown, fine to medium SAND (moist, no odor, no sheen)		
5				0					
3	3	b3							
				0		SM	Gray, silty, fine SAND with trace scattered wood debris (moist, no odor, no sheen)		
10	4	b3					Becomes wet at 11 ft.	ATD	

Boring Completed 08/24/01
Total Depth of Boring = 12.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

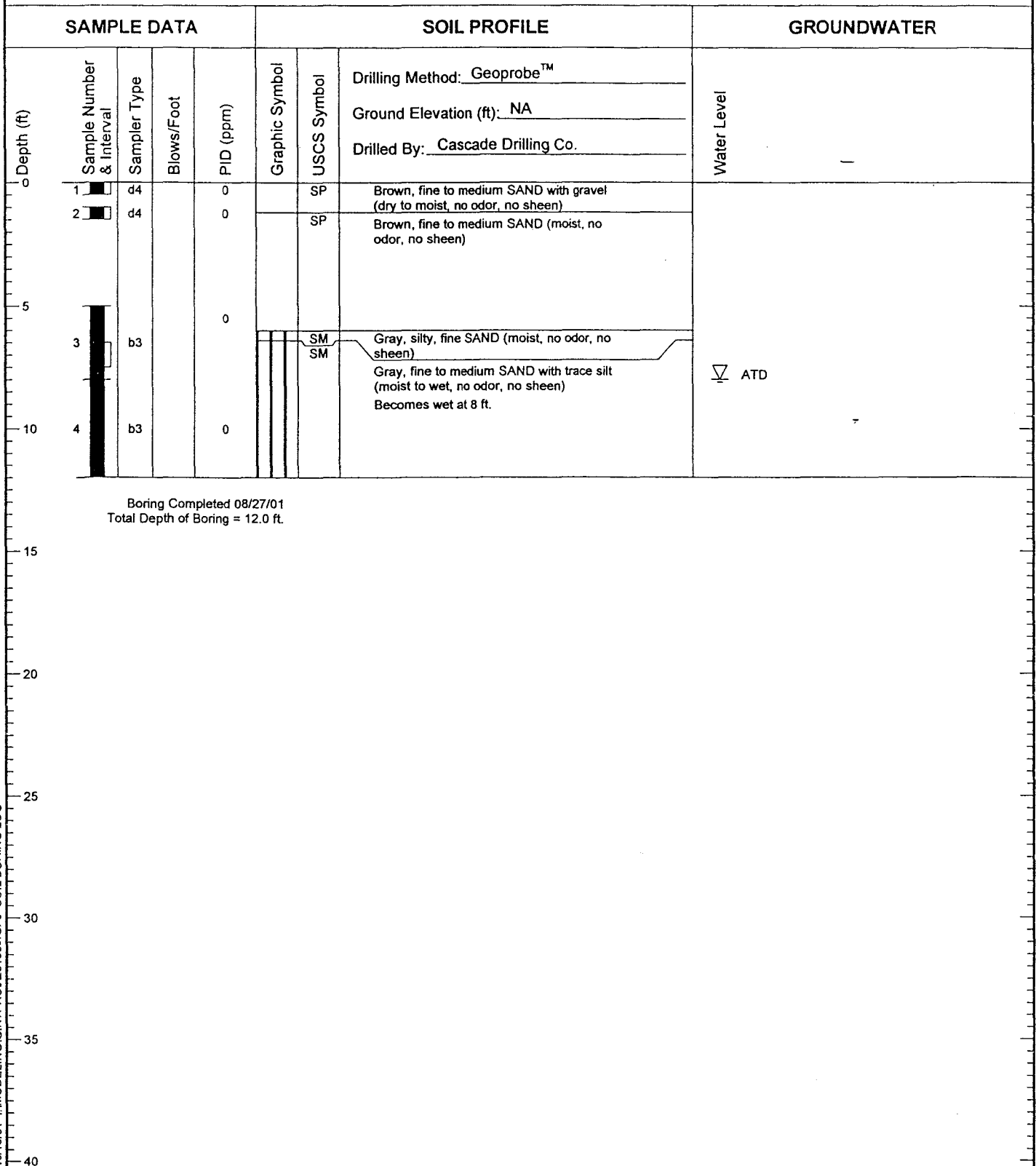


Log of Boring G6-2

Figure A-7

BZTO104(e)023065

G7-1



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G7-1

Figure A-8

G8-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Water Level
							Ground Elevation (ft): <u>NA</u>	
							Drilled By: <u>Cascade Drilling Co.</u>	
0	1	d4		0	GP		Grayish-brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)	
2	2	d4		0	SP		Brown, fine to medium SAND (dry, no odor, no sheen)	
5				0			Becomes moist at 5 ft.	
3		b3						
10	4	b3		0				
15	5	b3		0				
20	6	b3		0			Becomes wet at 20 ft.	
	7	b3						▽ ATD

Boring Completed 08/20/01
Total Depth of Boring = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G8-1

Figure A-9

G9-1

SAMPLE DATA					SOIL PROFILE		GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
0	1	d4		0		SP	<div>Drilling Method: <u>Geoprobe™</u></div> <div>Ground Elevation (ft): <u>NA</u></div> <div>Drilled By: <u>Cascade Drilling Co.</u></div>
2	2	d4		0		SP	
3		b3		750		SP	
4		b3		+2000			
5		b3		+2000			
15							<div>▽ ATD</div>

Boring Completed 08/24/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Log of Boring G9-1

Figure A-10

G10-1

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
0	1	d4		0	o o o o	GP	Grayish-brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)			
2	2	d4		0		SP	Brown, fine to medium SAND (moist, no odor, no sheen)			
5				0						
3	3	b3								
10	4	b3		0		SM	Gray, silty, fine SAND to fine, sandy SILT (moist to wet, no odor, no sheen)			
										▽ ATD

Boring Completed 08/24/01
Total Depth of Boring = 12.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231009.21 10/15/01 I:\MODELING\GINT\PROJ\231009.GPJ SOIL BORING LOG

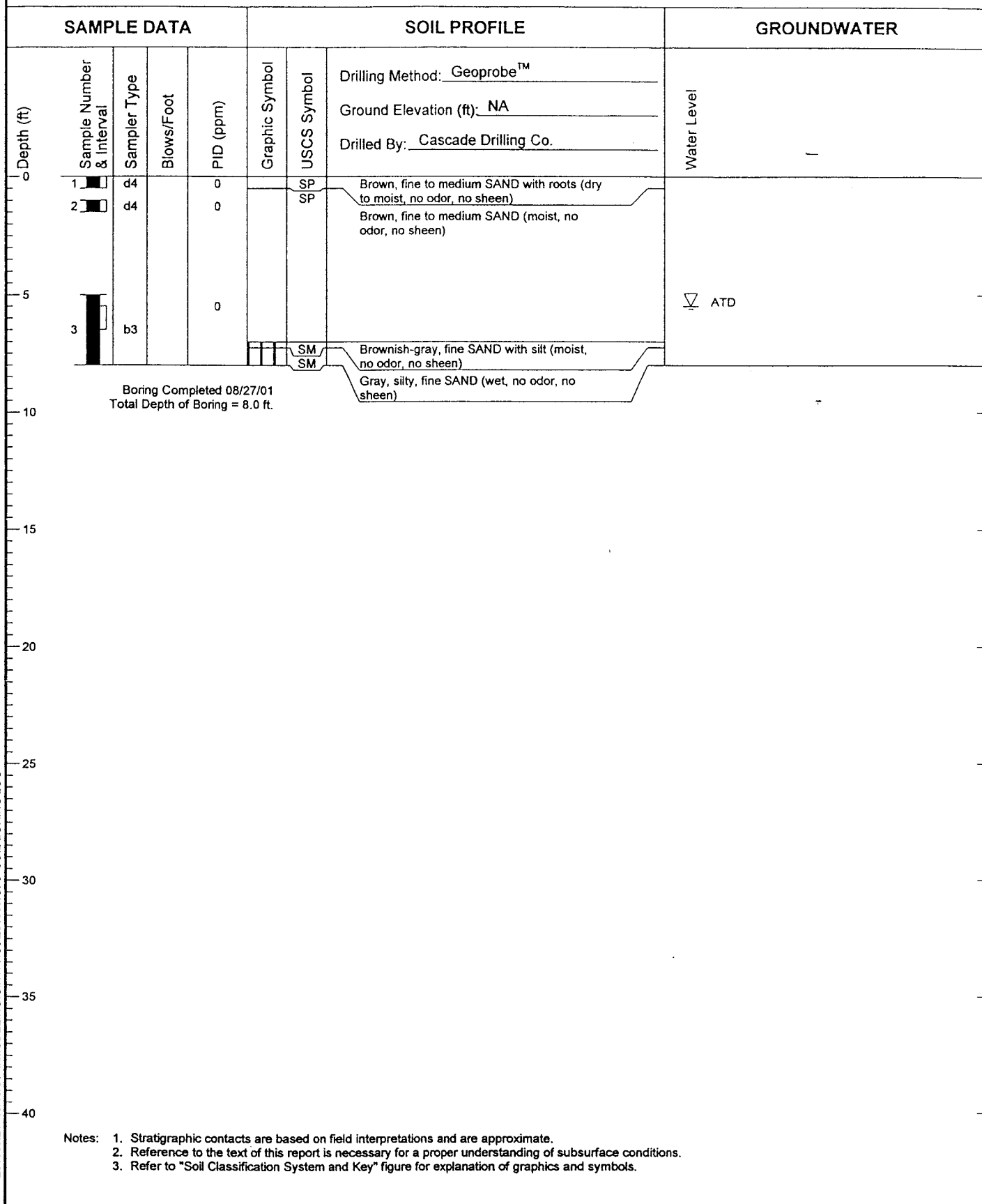


Log of Boring G10-1

Figure A-11

BZTO104(e)023069

G11-1



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G11-1

Figure A-12

G12-2

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Water Level
							Ground Elevation (ft): <u>NA</u>	
							Drilled By: <u>Cascade Drilling Co.</u>	
0	1	d4		0	GP		Brown, fine to medium SAND, with gravel (dry, no odor, no sheen)	
1	2	d4		0	SP			
3		b3		0			Brown, fine to medium SAND (moist, no odor, no sheen)	
4		b3		0				
5		b3		0				
6		b3		0				
							Becomes moist to wet at 16 ft.	
								▽ ATD

Boring Completed 08/20/01
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.










Log of Boring G12-2

Figure A-13

BZTO104(e)023071

G13-3

SAMPLE DATA					SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
1		d4		0		GP	Brown, fine to medium sandy GRAVEL (dry to moist, no odor, no sheen)			
2		d4		0		SP	Brown, fine to medium SAND (moist, no odor, no sheen)			
5		b3		27.3		SP	Gray, fine to medium SAND (moist, strong petroleum odor, no sheen)			
3										
10		b3		61.7						
				+2000			Becomes moist to wet, very strong petroleum odor at 12 ft.			
5		b3								▽ ATD
15										

Boring Completed 08/21/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G13-3

Figure A-14

BZTO104(e)023072

G14-1

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>NA</u> Drilled By: <u>Cascade Drilling Co.</u>	Water Level
0	1	d4		0		GP	Brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)	
2	2	d4		2.1		SP	Grayish-brown, fine to medium SAND (moist, mild ethanol odor, no sheen)	
5				63.3		SP	Gray, fine to medium SAND (moist, mild petroleum odor, no sheen)	
3		b3					Strong petroleum odor at 8 ft.	
10	4	b3		+2000				
				+2000				▽ ATD
15	5	b3					Becomes wet at 14 ft.	

Boring Completed 08/21/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Log of Boring G14-1

Figure A-15

G15-1

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>NA</u> Drilled By: <u>Cascade Drilling Co.</u>	Water Level
0	1	d4		0	GP		Brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)	
2	2	d4		0	SP		Brown, medium SAND (dry, no odor, no sheen)	
5				0		SP	Brown, fine to medium SAND (moist, no odor, no sheen)	
3		b3						
4		b3		0				
10				0				
15	5	b3			SM		Gray, fine SAND with silt (wet, no odor, no sheen)	∇ ATD

Boring Completed 08/22/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231009.21 10/15/01 I:\MODELING\GINT\PROJ231009.GPJ SOIL BORING LOG



Log of Boring G15-1

Figure A-16

BZTO104(e)023074

G16-2

SAMPLE DATA					SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
1	1	d4		0	GP	GP	Brown, fine to medium sandy GRAVEL (dry to moist, no odor, no sheen)			
2	2	d4		0	SP	SP				
3	3	b3		0			Becomes wet at 12 ft.			ATD
4	4	b3		0						
5	5	b3		0						

Boring Completed 08/21/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G16-2

Figure A-17

BZTO104(e)023075

G17-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Water Level
							Ground Elevation (ft): <u>NA</u>	
							Drilled By: <u>Cascade Drilling Co.</u>	
1	1	d4		0	o o o o	GP	Brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)	
2	2	d4		0	o o o o	GP		
						SP	Brown, fine to medium SAND (moist, no odor, no sheen)	
5		b3		0				
3		b3						
10	4	b3		0				
				0			Becomes wet at 12 ft.	
5		b3						▽ ATD
15								

Boring Completed 08/21/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G17-1

Figure A-18

BZTO104(e)023076

G18-2

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
1	1	d4		0	GP	GP	Brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)			
2	2	d4		0	SP	SP	Brown, fine to medium SAND (dry to moist, no odor, no sheen)			
3		b3		0						
4		b3		0						
5		b3		0		SM	Gray, fine SAND with silt (wet, no odor, no sheen)			ATD

Boring Completed 08/22/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

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Log of Boring G18-2

Figure A-19

BZTO104(e)023077

G19-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>NA</u> Drilled By: <u>Cascade Drilling Co.</u>		Water Level
0	1	d4		0		GP	Brown, fine to medium sandy GRAVEL (dry to moist, no odor, no sheen)	ATD	
	2	d4		0		SP	Brown, fine to medium SAND (moist, no odor, no sheen)		
5				0					
3		b3		0			Becomes wet at 8 ft.		
10	4	b3							
Boring Completed 08/22/01 Total Depth of Boring = 12.0 ft.									
15									
20									
25									
30									
35									
40									

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Boring Completed 08/22/01
Total Depth of Boring = 12.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G19-1

Figure A-20

BZTO104(e)023078

G20-1

SAMPLE DATA					SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>NA</u> Drilled By: <u>Cascade Drilling Co.</u>	Water Level	
0						AC	Asphalt		
1	1	d4		0		GP	Brown, sandy GRAVEL (dry to moist, no odor, no sheen)		
						SP	Brown, fine to medium SAND (moist, no odor, no sheen)		
5									
2	2	b3		0					
10									
3	3	b3		0					
				0					
15									
4	4	b3				SP	Reddish-brown, fine to medium SAND (moist, no odor, no sheen)	▽ ATD	
						SP	Gray, fine to medium SAND (wet, no odor, no sheen)		
Boring Completed 08/28/01 Total Depth of Boring = 16.0 ft.									
20									
25									
30									
35									
40									

Notes:

1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G20-1

Figure A-21

G21-1

SAMPLE DATA					SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
0	1	d4		0		AC	Gravel and asphalt pieces			
5	2	b3		0		SP	Brown, fine to medium SAND (moist to wet, no odor, no sheen)			
10	3	b3		0						
15	4	b3		0						
20	5	b3		23.1		SP	Gray, fine to medium SAND (wet, mild petroleum odor, no sheen)			▽ ATD

Boring Completed 08/28/01
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G21-1

Figure A-22

BZTO104(e)023080

G22-1

SAMPLE DATA					SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Water Level	
							Ground Elevation (ft): <u>NA</u>		
							Drilled By: <u>Cascade Drilling Co.</u>		
0	1	d4		0	○ ○ ○ ○	GP	Brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)		
1	2	d4		0		SP		Brown, fine to medium SAND (moist, no odor, no sheen)	
5				0					
3		b3							
10	4	b3		0					
				0					
15	5	b3						▽ ATD	
						SP	Gray, fine to medium SAND (wet, mild petroleum odor, no sheen)		
Boring Completed 08/29/01 Total Depth of Boring = 16.0 ft.									
20									
25									
30									
35									
40									

Notes:

1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Boring Completed 08/29/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G22-1

Figure A-23

G23-2

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
0	1	d4		0		SP	Brown, fine to medium SAND with gravel (dry, no odor, no sheen)			
1	2	d4		0		SP	Brown, fine to medium SAND (moist, no odor, no sheen)			
5	3	b3		0						
10	4	b3		0						
15	5	b3		0						
						WD	Log/Wood debris			
						SP	Gray, fine to medium SAND (wet, no odor, no sheen)			

Boring Completed 08/29/01
Total Depth of Boring = 16.0 ft

Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G23-2

Figure A-24

G24-3

SAMPLE DATA					SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>NA</u> Drilled By: <u>Cascade Drilling Co.</u>	Water Level
0	1	d4		0		AC	Asphalt	
						GP	Brown, fine to medium sandy GRAVEL (dry to moist, no odor, no sheen)	
						SP	Brown, fine to medium SAND (moist, no odor, no sheen)	
5				0				
2		b3						
						SM	Brown, silty, fine SAND with orange and black mottling (moist, no odor, no sheen)	
10	3	b3		0				
				0				
						SM	Grayish-brown, silty, fine SAND with orange mottling (moist to wet, no odor, no sheen)	
15	4	b3						▽ ATD
						SM	Gray, silty, fine SAND (wet, no odor, no sheen)	

Boring Completed 08/28/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231009.21 10/15/01 I:\MODELING\GINTPROJ\231009.GPJ SOIL BORING LOG



Log of Boring G24-3

Figure A-25

BZTO104(e)023083

G25-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): <u>NA</u> Drilled By: <u>Cascade Drilling Co.</u>		Water Level
0									
1	1	d4		0		GP	Brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)		
2	2	d4		0		SP	Brown, fine to medium SAND (moist, no odor, no sheen)		
5				0					
3		b3							
10	4	b3		0					
15	5	b3		0					
6		b3		0		SP	Gray, fine to medium SAND with scattered wood debris (wet, no odor, slight sheen)		▽ ATD
20						SM	Gray, silty, fine SAND (wet, no odor, no sheen)		
Boring Completed 08/29/01 Total Depth of Boring = 20.0 ft.									
25									
30									
35									
40									

Notes:

1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.









Log of Boring G25-1

Figure A-26

BZTO104(e)023084

G26-1

SAMPLE DATA				SOIL PROFILE			GROUNDWATER			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™	Ground Elevation (ft): NA	Drilled By: Cascade Drilling Co.	Water Level
1		d4		0		GP	Brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)			
2		d4		0		SP				
3		b3		0			Brown, fine to medium SAND (moist, no odor, no sheen)			
4		b3		0						
5		b3		48.5						
15						SP	Gray, fine to medium SAND (wet, strong petroleum odor, no sheen)			▽ ATD

Boring Completed 08/29/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231009.21 10/15/01 I:\MODELING\GINTPROJ\231009.GPJ SOIL BORING LOG



Log of Boring G26-1

Figure A-27

G27-2

SAMPLE DATA					SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Ground Elevation (ft): <u>NA</u>	Drilled By: <u>Cascade Drilling Co.</u>	Water Level
1		d4		0		GP	Brown, fine to medium sandy GRAVEL (dry, no odor, no sheen)			
2		d4		0		SP				
3		b3		0						
4		b3		0						
5		b3				SP	Gray, fine to medium SAND (moist to wet, no odor, no sheen)			▽ ATD

Boring Completed 08/28/01
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Log of Boring G27-2

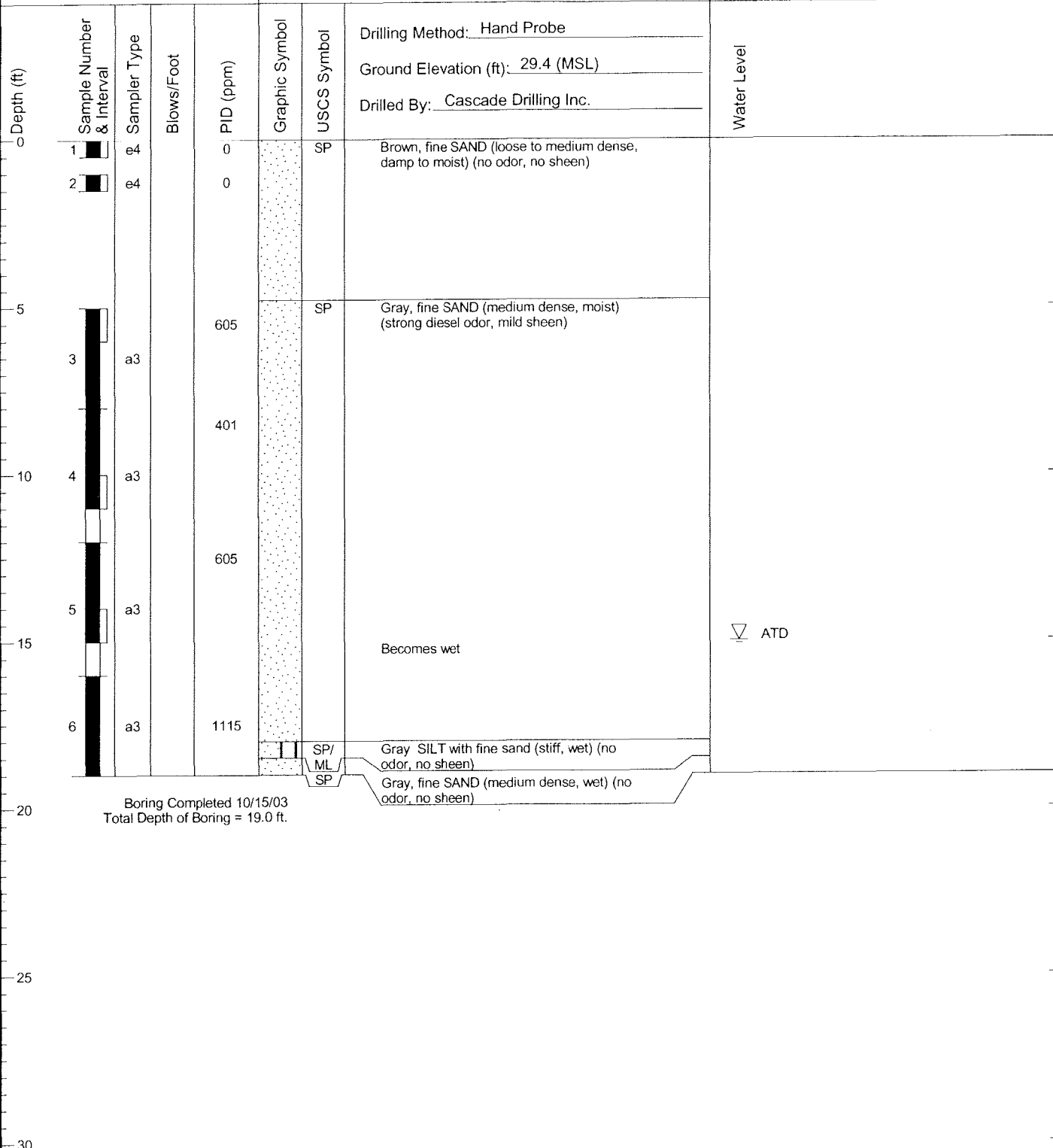
Figure A-28

HB01

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure

A-

Time Oil NW Terminal
Portland, Oregon

Log of Boring HB01



BZTO104(e)023087

HB02

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Hand Probe	Water Level
							Ground Elevation (ft): 27.9 (MSL)	
0	1	e4		0		SP	Brown, fine SAND (loose to medium dense, damp to moist) (no odor, no sheen)	
1	2	e4		0				
5	3	a3		333		SP	Gray, fine SAND (medium dense, moist) (strong diesel odor, mild sheen)	
10	4	a3		176				
15	5	a3		133			Becomes wet	▽ ATD
					SP/ML		Gray SILT with fine sand and trace wood debris (stiff, wet) (no odor, no sheen)	

Boring Completed 10/15/03
Total Depth of Boring = 16.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231009.31 12/3/04 I:\MODELING\GINT\PROJECTS\231009.GPJ SOIL BORING LOG



Time Oil NW Terminal
Portland, Oregon

Log of Boring HB02

Figure
A-

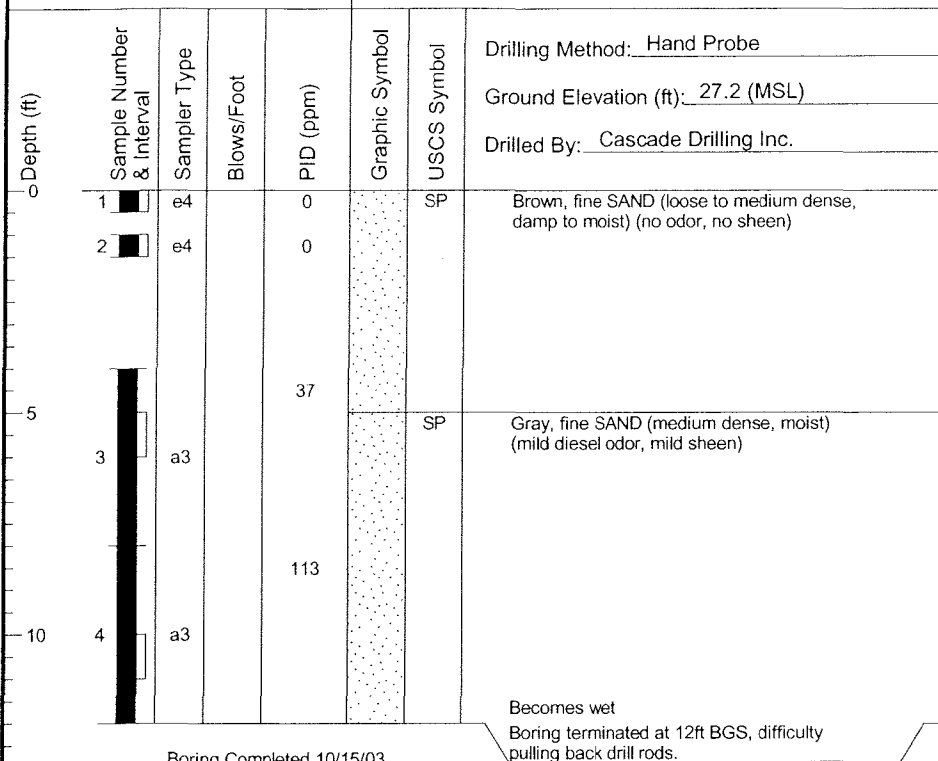
BZTO104(e)023088

HB03

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 10/15/03
Total Depth of Boring = 12.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

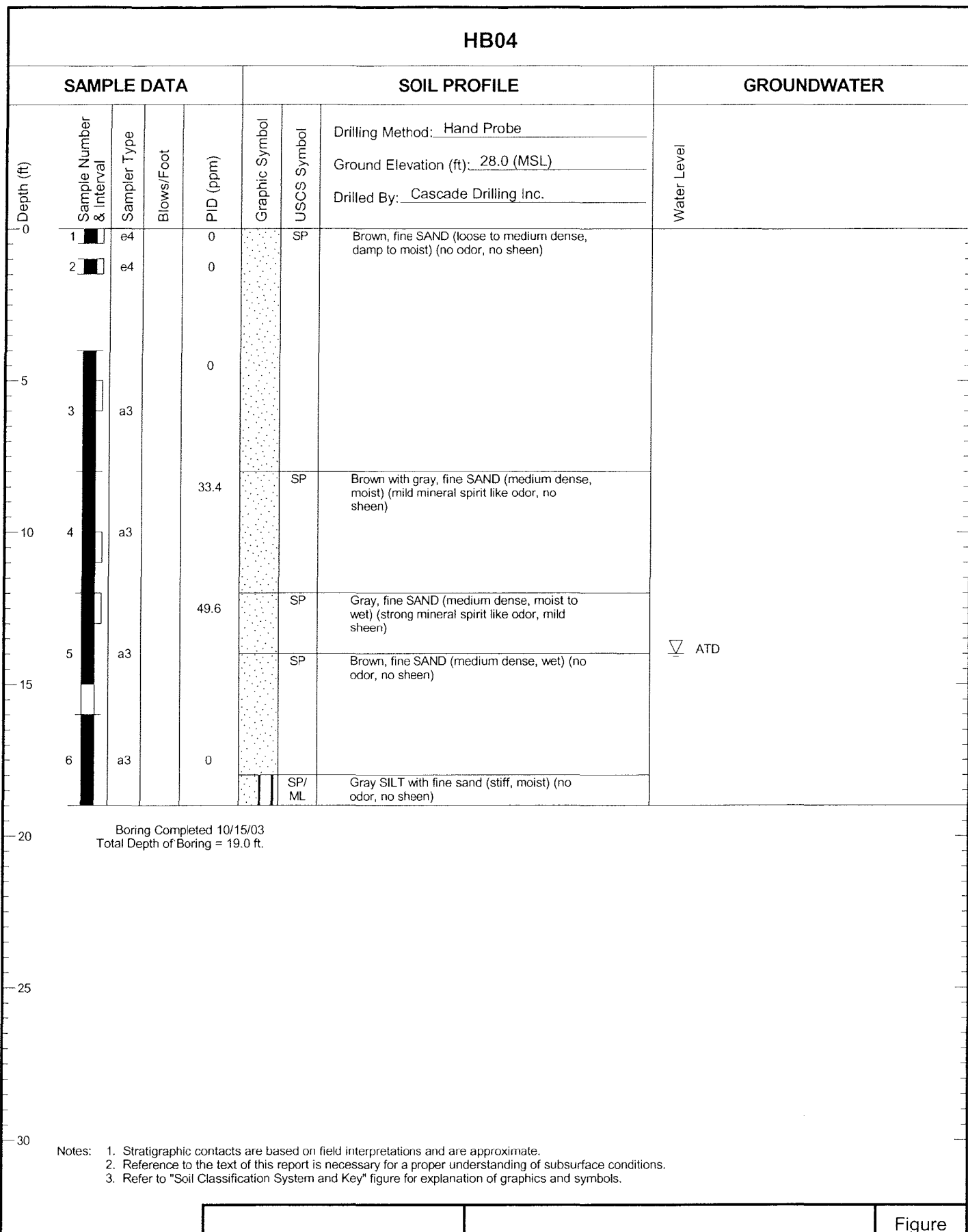


Time Oil NW Terminal
Portland, Oregon

Log of Boring HB03

Figure
A-

231009.31 12/3/04 I:\MODELING\GINT\PROJECTS\231009.GPJ SOIL BORING LOG



Time Oil NW Terminal
Portland, Oregon

Log of Boring HB04

Figure
A-

BZTO104(e)023090

HB05

SAMPLE DATA				SOIL PROFILE			GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Water Level
1	1	e4		0		SP	Drilling Method: <u>Hand Probe</u> Ground Elevation (ft): <u>28.4 (MSL)</u> Drilled By: <u>Cascade Drilling Inc.</u> Brown, fine SAND (loose to medium dense, damp to moist) (no odor, no sheen) Gray, fine SAND (medium dense, moist) (strong diesel odor, moderate sheen) Becomes wet Gray SILT with fine sand (stiff, moist) (no odor, no sheen) Gray, fine SAND (medium dense, wet) (no odor, no sheen)
2	2	e4		0			
5	3	a3		1005		SP	
10	4	a3		1165			
15	5	a3		402			
20	6	a3		336		SP/ML	
						SP	

Boring Completed 10/15/03
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland, Oregon

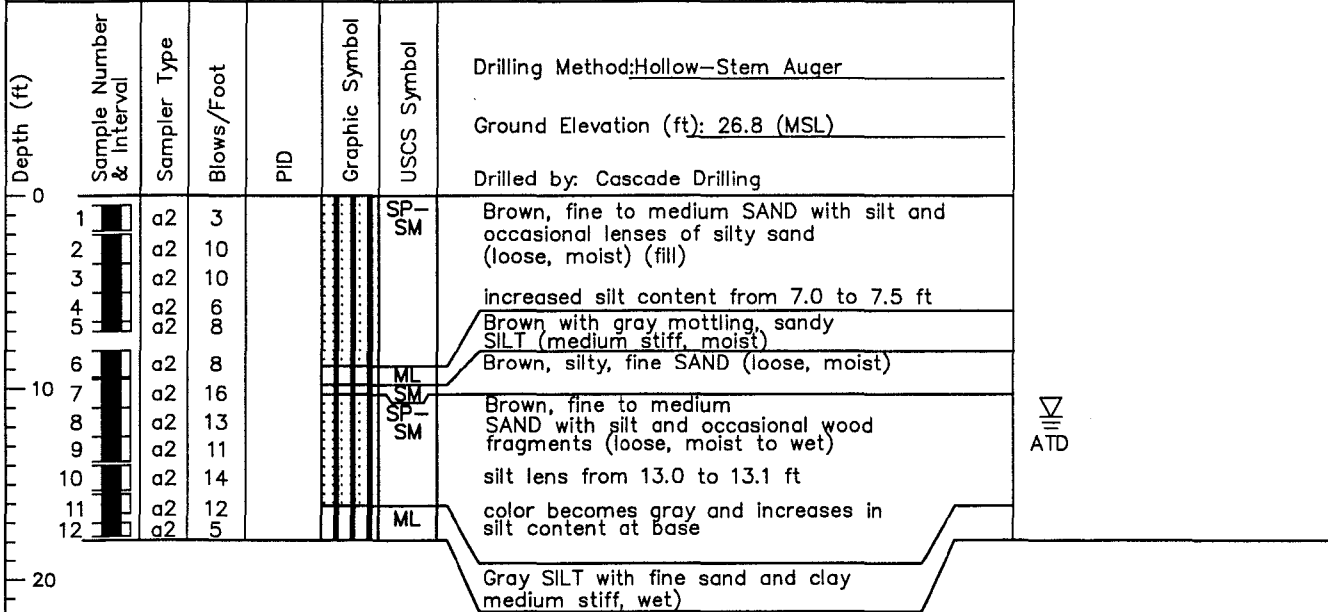
Log of Boring HB05

Figure
A-

LB1

SAMPLE DATA

SOIL PROFILE



Boring Completed 10/23/96
Total Depth of Boring = 17.7 ft.

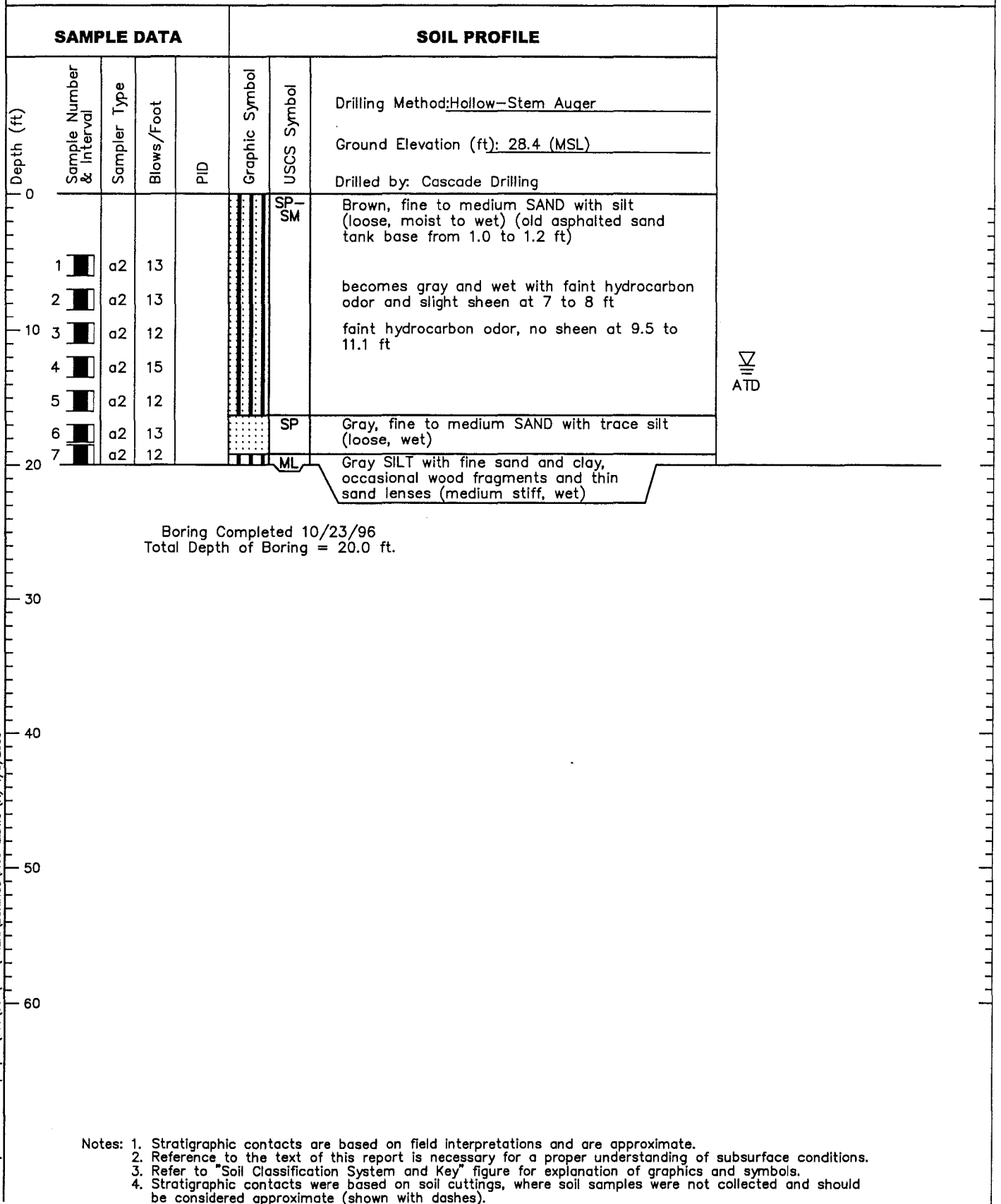
- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB1

Figure C-1

LB2



Boring LB2

Figure C-2

LB3

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger
0							Ground Elevation (ft): 28.2 (MSL)
							Drilled by: Cascade Drilling
1	1	a2	15			SP-SM	Brown, fine to medium SAND with silt (loose, moist to wet) (grades slightly coarser)
2	2	a2	14				moderate hydrocarbon odor, no sheen at 4.5 to 6 ft
3	3	a2	21				occasional thin (1/8 to 1/4-in) interbeds of silt with moderate hydrocarbon odor, no sheen
4	4	a2	15				
5	5	a2	10			ML-SM	Gray SILT with clay and fine sand interbedded with silty fine SAND, occasional wood fragments near top (medium stiff/loose, wet)
6	6	a2	9				
7	7	a2	6				

ATD

Boring Completed 10/23/96
Total Depth of Boring = 19.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB3

Figure C-3

LB4

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger
0							Ground Elevation (ft): 27.7 (MSL)
							Drilled by: Cascade Drilling
1	1	a2	18			SP-SM	Brown, fine to medium SAND with silt and gravel in upper 10 ft and occasional 0.1 ft-thick silty sand lenses between 10-15.5 ft (loose, moist to wet)
2	2	a2	15				
3	3	a2	16				
4	4	a2	9				color becomes gray at 9.5 to 11 ft
5	5	a2	17				
6	6	a2	13				
7	7	a2	5			ML	Gray SILT with clay, fine sand, and occasional wood fragments (soft, wet)

∇
ATD

Boring Completed 10/25/96
Total Depth of Boring = 18.5 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



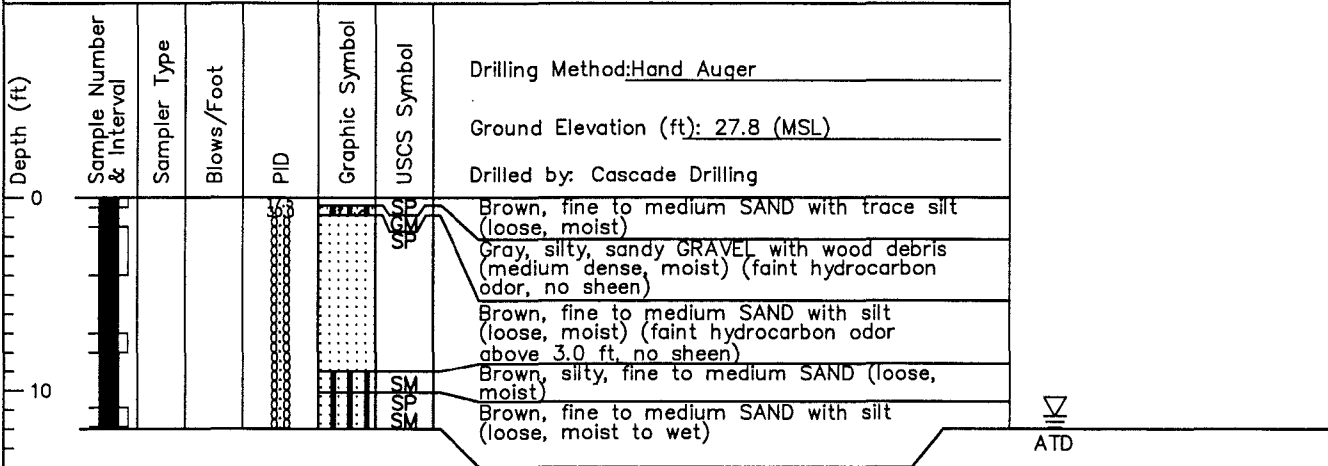
Boring LB4

Figure C-4

LB5

SAMPLE DATA

SOIL PROFILE



Boring Completed 10/22/96
Total Depth of Boring = 12.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB5

Figure C-5

LB6

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	
0							Drilling Method: <u>Hollow-Stem Auger</u>
							Ground Elevation (ft): <u>29.0 (MSL)</u>
							Drilled by: <u>Cascade Drilling</u>
1	1	a2	17			SP SM	Brown, fine to medium SAND with silt (loose, moist to wet) asphalt layer from 2.5 to 2.7 ft @ 14.5 ft sandy silt lens from 11.8 to 12.2 ft occasional thin (1/4 to 1/2-inch) silt lenses wood fragments at 17.7 to 17.8 ft
2	2	a2	15			ML	
3	3	a2	21				
4	4	a2	16				Gray SILT with clay and fine sand occasional sand layers 0.1 ft thick (medium stiff, wet)
5	5	a2	19				
6	6	a2	17				
7	7	a2	17				

ATD

Boring Completed 10/23/96
Total Depth = 18.5 ft.

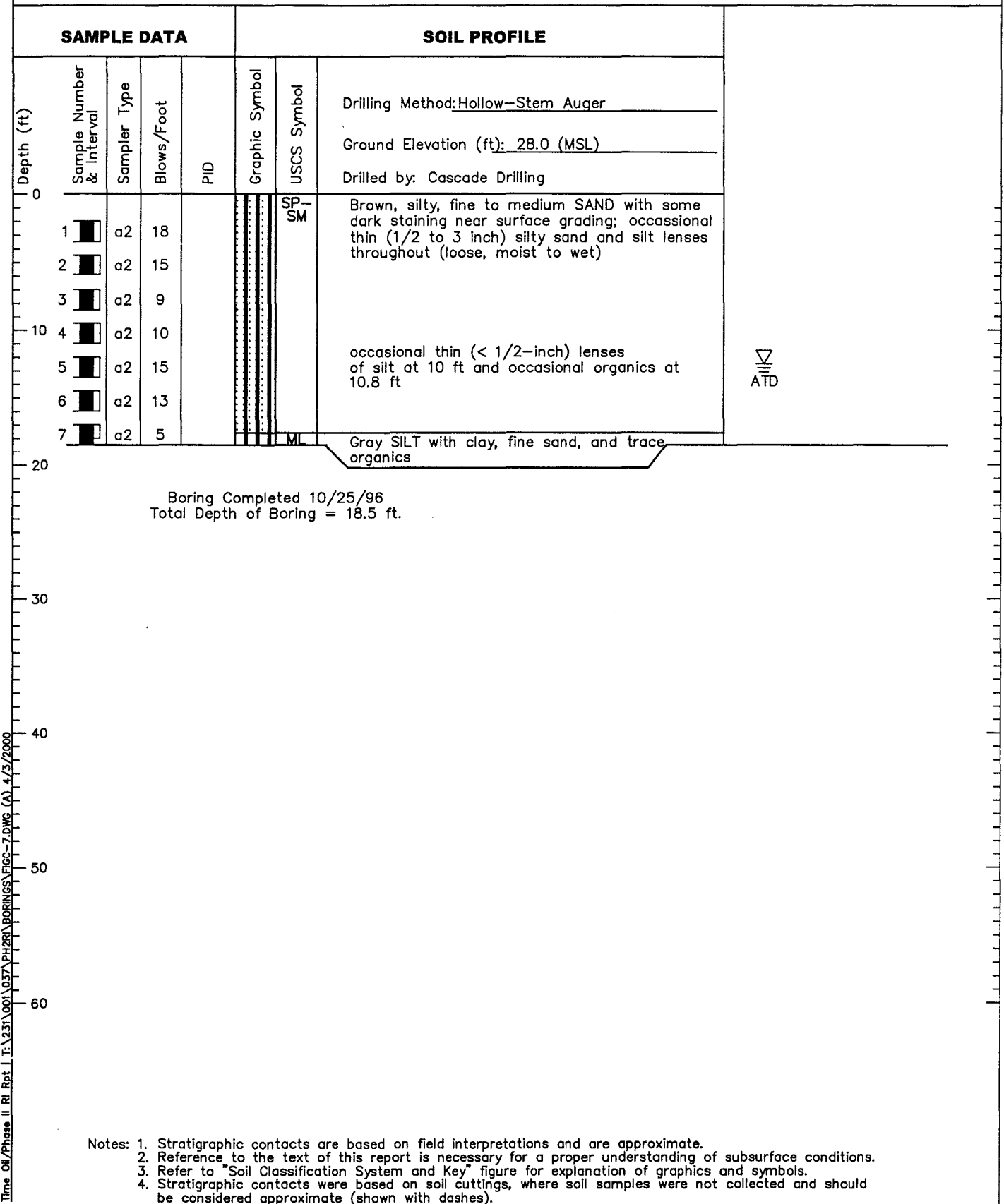
- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB6

Figure C-6

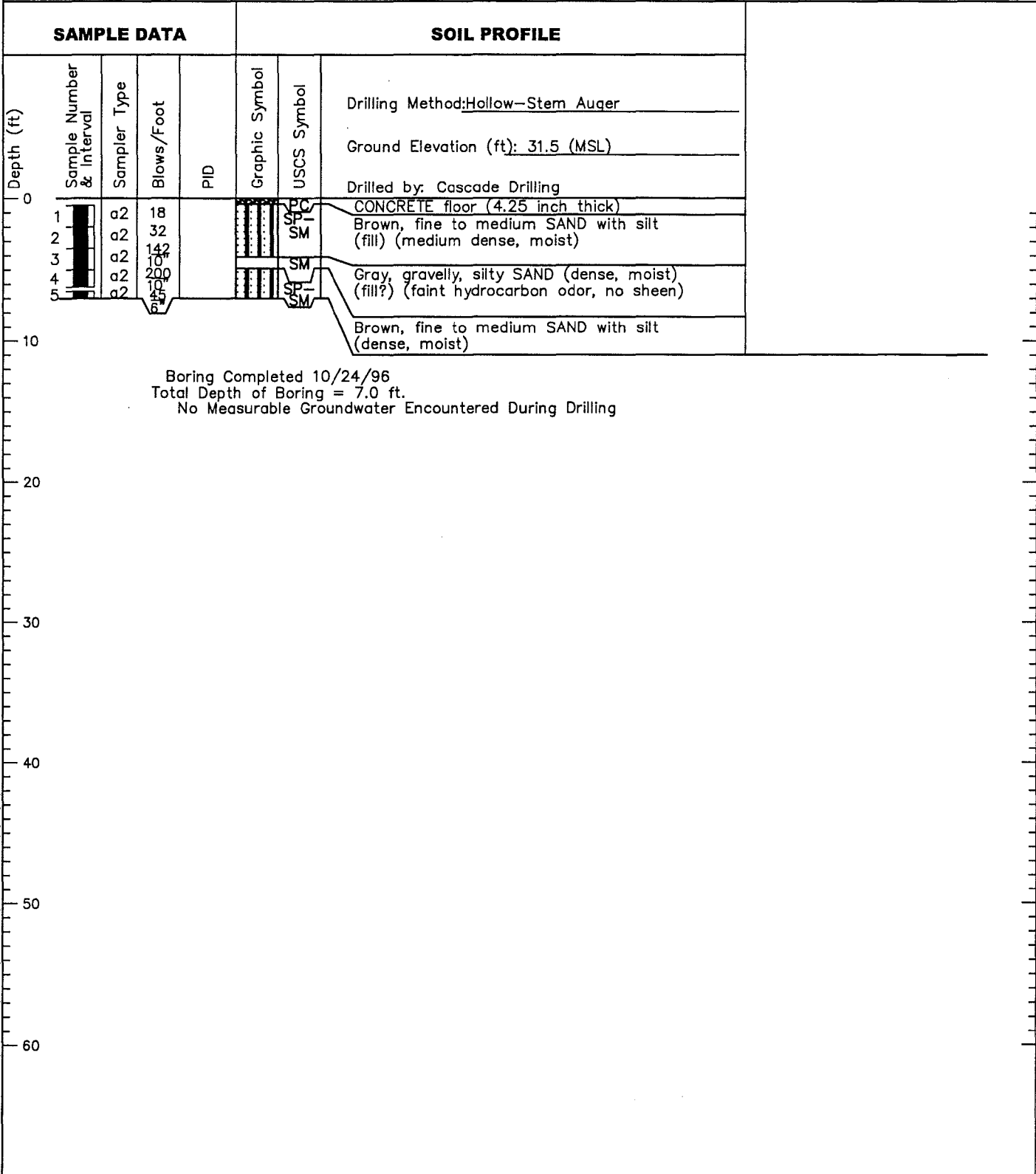
LB7



Boring LB7

Figure C-7

LB8



Boring Completed 10/24/96
Total Depth of Boring = 7.0 ft.
No Measurable Groundwater Encountered During Drilling

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).

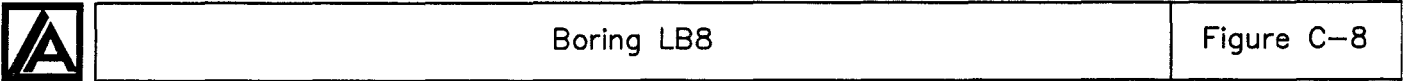


Figure C-8

LB9

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger
0							Ground Elevation (ft): 31.5 (MSL)
1	a2	19					Drilled by: Cascade Drilling
2	a2	16					CONCRETE floor (4.25 inch thick)
3	a2	75					Brown, fine to medium SAND with silt (fill) (medium, moist)
4	a2	100					
5	a2	78					
6	a2	42					Brown, gravelly, silty SAND from 4.1 to 4.4 ft

Boring Completed 10/24/96
Total Depth of Boring = 9.0 ft.
No Measurable Groundwater Encountered During Drilling

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB9

Figure C-9

LB10

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	
0							Drilling Method: Hollow-Stem Auger
							Ground Elevation (ft): 31.5 (MSL)
							Drilled by: Cascade Drilling
1	a2	a2	21			PC	CONCRETE floor (4 inch thick)
2	a2	a2	5			SP-SM	Brown, fine to medium SAND with silt (loose, moist) (fill)
3	a2	a2	8				
4	a2	a2	8				
5	a2	a2	10				

Boring Completed 10/24/96
Total Depth of Boring = 8.0 ft.
No Measurable Groundwater Encountered During Drilling

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB10

Figure C-10

LB11

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	
0							Drilling Method: Hollow Stem Auger
							Ground Elevation (ft): 27.0 (MSL)
							Drilled by: Cascade Drilling
1	1	a2	3	0.0		SP-SM	Brown, fine to medium SAND with silt (very loose to loose, moist to wet) (fill)
2	2	a2	2	4.1			
3	3	a2	14	0.0			
4	4	a2	13	0.0		SP-SM	Dark gray, fine to medium SAND with silt and zones of sand with silt (loose, wet) (faint to moderate hydrocarbon odor, no sheen)
5	5	a2	22	81.0			
6	6	a2	26	18.0			
7	7	a2	26	0.0			Dark gray, SILT with sand and trace organics (medium stiff, wet) (slight odor at 17.6 ft, no sheen)
8	8	a2	11	0.0		ML	

ATD

Boring Completed 03/10/97
Total of Boring Depth = 18.5 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB11

Figure C-11

LB12

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger
0							Ground Elevation (ft): 27.0 (MSL)
							Drilled by: Cascade Drilling
1	1	a2	6	0.0		SP-SM	Brown, fine to medium SAND with silt (very loose to loose, moist to wet) (fill)
2	2	a2	3	0.0			
3	3	a2	14	0.0			
4	4	a2	15	0.0			
5	5	a2	11	0.0		SP	Brown to dark gray fine to medium SAND with silt lenses (loose, wet) (slight to moderate odor, slight sheen)
6	6	a2	11	0.0		ML	Gray SILT with sand and trace organics (medium to stiff, wet)

▽
ATD

Boring Completed 03/10/97
Total Depth of Boring= 17.5 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB12

Figure C-12

Time Oil/Phase II RI Rpt | T: \231\001\037\PH2R\BORINGS\FIGC-12.DWG (A) 4/3/2000

LB13

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow Stem Auger</u>	Ground Elevation (ft): <u>27.0 (MSL)</u>	Drilled By: <u>Cascade Drilling</u>
0									
1	1	a2	11	0.0		SP-SM	Brown, fine to medium SAND with silt and occasional silt lenses (very loose to loose, moist to wet) (fill)		
2	2	a2	9	0.0					
3	3	a2	16	0.0					
4	4	a2	25	0.0					
5	5	a2	36	42.1		SP	Dark gray, fine to medium SAND with thin silt lenses (loose to medium dense, wet) (slight to moderate odor, slight sheen on drill rods)		
6	6	a2	23	15.0					
7	7	a2	10	0.0		ML	Gray, sandy SILT with organics near top of unit (medium stiff, wet) (slight odor, slight sheen)		

▽
ATD

Boring Completed 03/10/97
Total Depth of Boring= 18.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB13

Figure C-13

Time Oil/Phase II RI Rpt | T: \231\001\037\PH2R\BORINGS\FIGC-13.DWG (A) 4/3/2000

LB14

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow-Stem Auger</u>	Ground Elevation (ft): <u>28.0 (MSL)</u>	Drilled by: <u>Cascade Drilling</u>
0									
1	1	a2	26	0.0		SP	Brown, fine to medium SAND (loose, moist) (fill)		
2	2	a2	18	0.0					
3	3	a2	11	61.3					
4	4	a2	21	521		SP-SM	Medium to dark gray, fine to medium SAND with silt (loose, wet) (fill) (strong odor, heavy sheen)		
5	5	a2	24	942		SP	Dark gray fine to medium SAND (loose, wet) (strong odor, heavy sheen)		
6	6	a2					slight to moderate heaving sands at 15 to 16.5 ft		
7	7	a2	20				faint odor, slight sheen at 16.5 ft		
8	8	a2	15	1.7		ML	Gray SILT with sand and trace organics (stiff, wet)		

▽
ATD

Boring Completed 03/10/97
Total Depth of Boring= 19.5 ft.

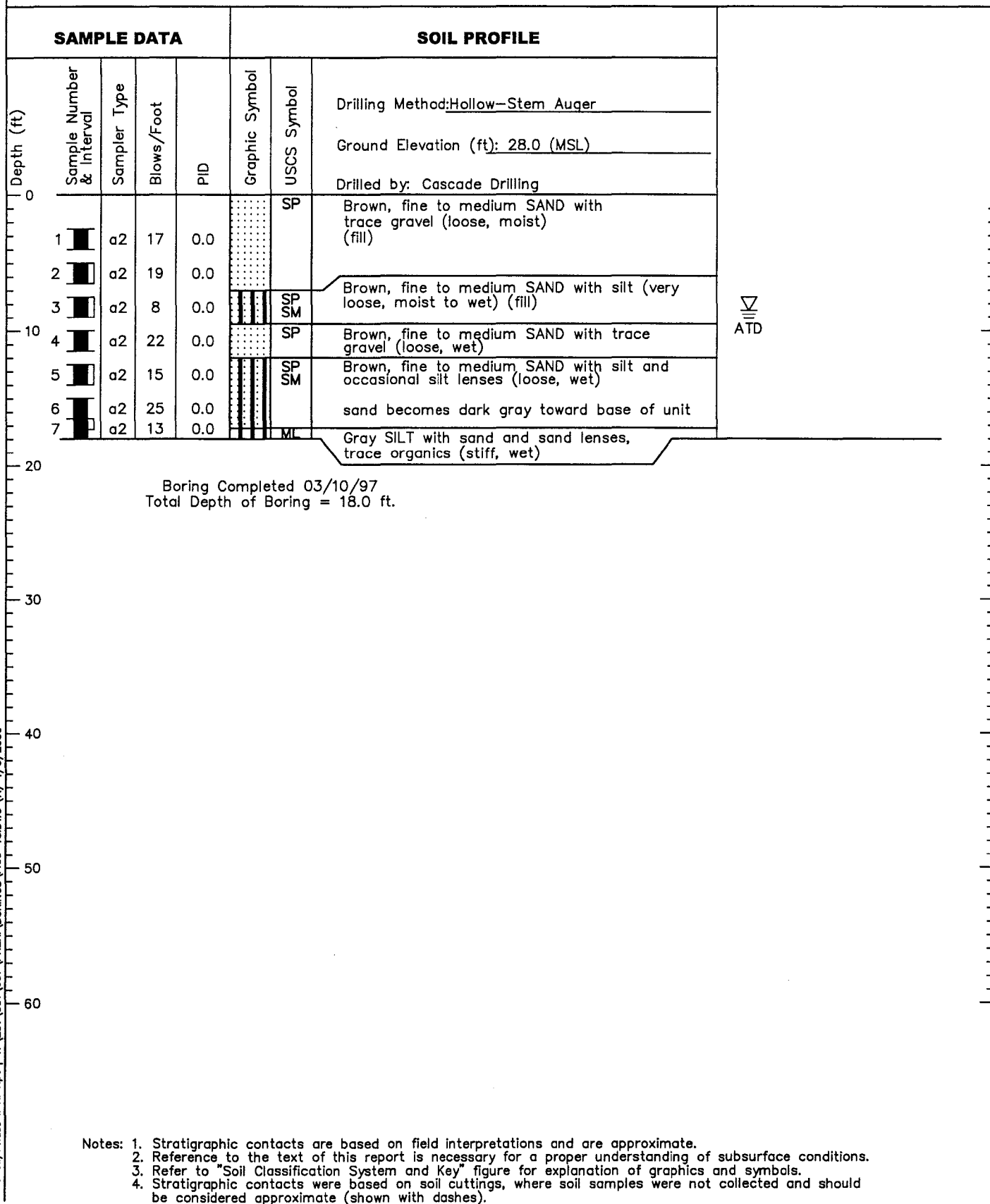
- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB14

Figure C-14

LB15



Boring LB15

Figure C-15

LB16

SAMPLE DATA					SOIL PROFILE	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol
0	1	a				SP
2	2	b2	14	0.0		SP-SM
3	3	a2	29	0.0		
4	4	a2	34	0.0		
5	5	b2	25	0.0		SP
6	6	a2	19	0.0		
7	7	b2	14	0.0		
8	8	a2	22	0.0		
9	9	a2	24	0.0		
10	10	b2	16	0.0		
11	11	a2	20	0.0		ML

Drilling Method: Hollow-Stem Auger

Ground Elevation (ft): 28.0 (MSL)

Drilled by: Cascade Drilling

Brown, fine to medium SAND with occasional dark gray fine to medium sand lenses (loose, moist) (fill)

Brown, fine to medium SAND with silt and interbeds of sand and silty sand (loose to medium dense, moist to wet)

Brown, fine to medium SAND with occasional thin (< 2-inch) silt lenses (loose, wet)

dark gray silt lens 0.1 ft thick

Gray SILT with trace organics (medium stiff, wet)

ATD

Boring Completed 03/12/97
Total Depth of Boring = 23.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB16

Figure C-16

LB17

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger
0	1	a					Ground Elevation (ft): 28.4 (MSL)
1	2	a2	65	0.0			Drilled by: Cascade Drilling
2	3	a2	37	0.0			ASPHALT SAND (0.5 ft thick)
3	4	b2	15	0.0			Gray GRAVEL (loose, moist) (base course fill) (moderate odor, slight sheen, trace product)
4	5	a2	24	0.0			Brown, fine to medium SAND (loose to medium dense, moist to wet)
5	6	a2	28	0.0			moderate odor, slight sheen at 10 ft
6	7	b2	19	0.0			Brown, sandy SILT (stiff, wet)
7	8	a2	17	0.0			Brown, fine to medium SAND (loose to medium dense, wet)
8	9	a2	17	0.0			grades to dark gray @ 16.5 ft
9	10	b2	8	0.0			no odor, moderate sheen @ 18 ft
10	11	b2	8	0.0			Dark gray SILT with trace sand (medium stiff, wet)

ATD

Boring Completed 03/11/97
Total Depth of Boring = 20.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB17

Figure C-17

Time Oil/Phase II RI Rpt | T: \231\001\037\PH2R\BORINGS\FIGC-17.DWG (A) 4/3/2000

LB18

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	
0	1	a				SP	Drilling Method: Hollow-Stem Auger
2	a2	66	0.0				Ground Elevation (ft): 28.1 (MSL)
3	a2	19	0.0				Drilling by: Cascade Drilling
4	b2	15	0.0				Brown, fine to medium SAND with occasional silt lenses (loose to medium dense, moist to wet)
5	a2	16	0.0				gray silt lens 0.2 ft thick @ 13.5 ft
6	a2	25	0.0				color grades to dark gray @ 15 ft
7	b2	14	0.0				gray silt lens 0.2 ft thick @ 19 ft
8	a2	19	0.0				
9	a2	14	0.0				
10	b2	15	0.0		ML		Gray SILT with sand lenses (stiff, wet)

ATD

Boring Completed 03/11/97
Total Depth of Boring = 21.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



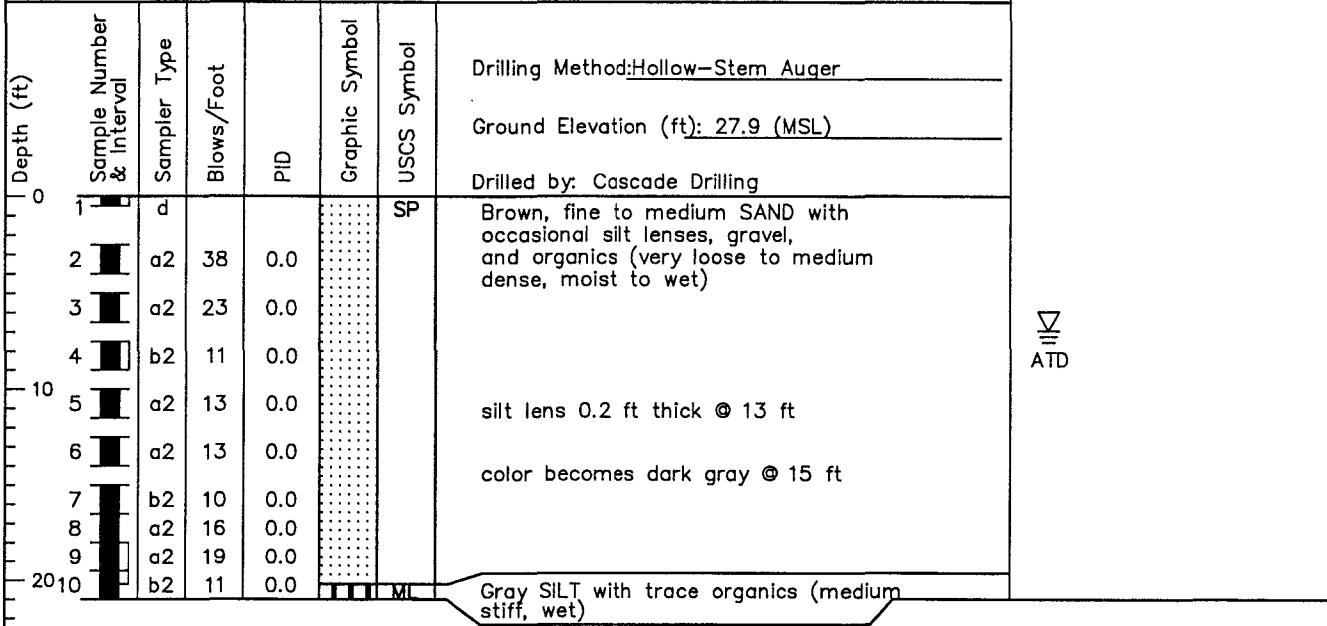
Boring LB18

Figure C-18

LB19

SAMPLE DATA

SOIL PROFILE



Boring Completed 03/11/97
Total Depth of Boring = 21.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB19

Figure C-19

LB20

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger
0	1	d		0.0		SP	Ground Elevation (ft): 28.0 (MSL)
2	2	a2	26	0.0		SP	Drilled by: Cascade Drilling
3	3	b2	13	0.0			Brown-gray, fine to medium SAND with gravel (medium dense, moist) (fill)
4	4	a2	29	0.0			Brown, fine to medium SAND with occasional silt lenses (loose to medium dense, moist to wet)
5	5	a2	19	0.0			
6	6	b2	17	0.0			color becomes dark gray @ 15.5 ft
7	7	a2	23	0.0			
8	8	a2	12	0.0		ML	Gray SILT with trace organics (stiff, wet)

ATD

Boring Completed 03/11/97
Total Depth of Boring = 18.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB20

Figure C-20

LB21

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	
0	1	a				SP-SM/SP	Drilling Method: Hollow-Stem Auger
2	a2	50	0.0				Ground Elevation (ft): 28.1 (MSL)
3	a2	28	0.0				Drilled by: Cascade Drilling
4	b2	21	0.0				Brown, fine to medium SAND with silt (medium dense, moist) (fill)
5	a2	25	0.0				Brown, fine to medium SAND with occasional silt lenses (loose to dense, moist to wet)
6	a2	29	0.0				
7	b2	12	0.0				color becomes dark gray @ 15.5 ft
8	a2	9	0.0			ML	Gray SILT with trace organics (medium stiff, wet)

▽
ATD

Boring Completed 03/11/97
Total Depth of Boring = 18.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB21

Figure C-21

LB22

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger
0	1	d		0.0		SP-SM	Ground Elevation (ft): 28.1 (MSL)
2	2	a2	29	0.0		SP-SM	Drilled by: Cascade Drilling
3	3	b2	21	0.0		SP-SM	Brown, fine to medium SAND with silt (medium dense, moist) (fill?)
4	4	a2	19	0.0		SP-SM	Brown, fine to medium SAND (loose to medium dense, moist)
5	5	a2	11	0.0		SP-SM	Brown, fine to medium SAND with silt (loose, wet)
6	6	b2	17	0.0		SP-SM	
7	7	a2		0.0		SP-SM	
8	8	a2	22	0.0		ML	Gray SILT with trace organics (medium stiff, wet)

Boring Completed 03/11/97
Total Depth of Boring = 18.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB22

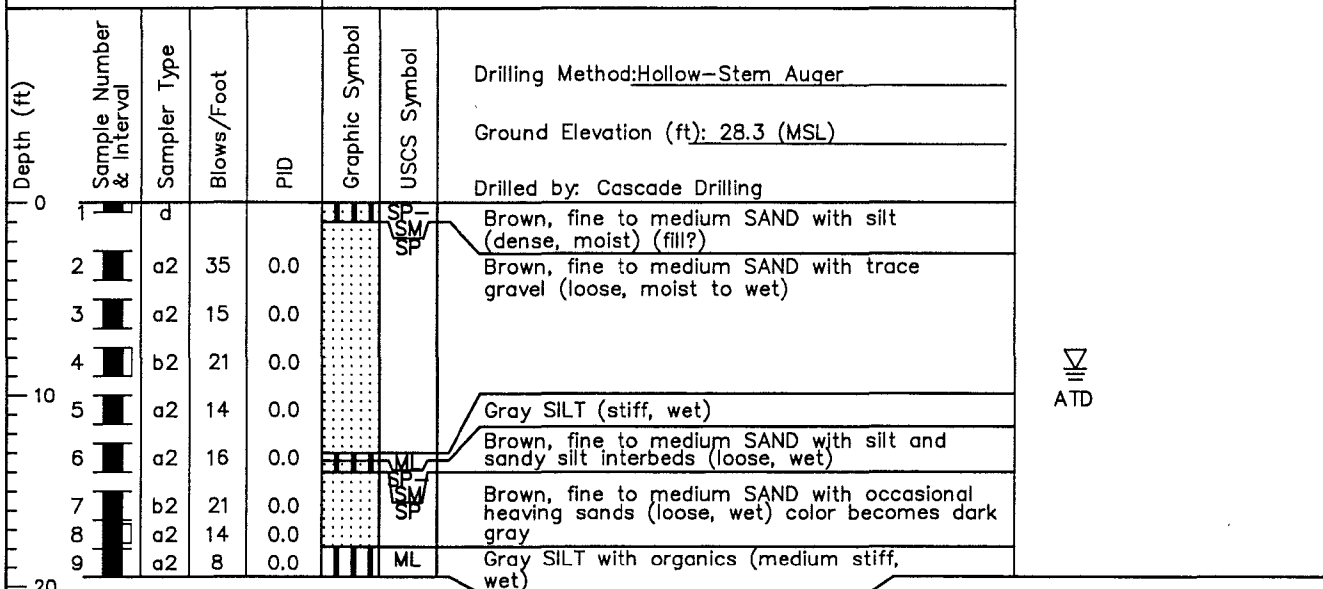
Figure C-22

Time Oil/Phase II RI Rpt | T: \231\001\037\PH2R\BORINGS\FIGC-22.DWG (A) 4/3/2000

LB23

SAMPLE DATA

SOIL PROFILE



Boring Completed 03/11/97
Total Depth of Boring = 19.5 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB23

Figure C-23

LB24

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow-Stem Auger</u>	Ground Elevation (ft): <u>29.7 (MSL)</u>	Drilled by: <u>Cascade Drilling</u>
0									
1	1	a		0.0		SP	Brown, fine to medium SAND (loose, moist to wet) (slight odor, no sheen)		
2	2	a2	13	0.0					
3	3	a2	9	0.0					
10	4	a2	18	0.0					
5	5	a2	20	0.0			color becomes gray @ 7.5 ft		

ATD

Boring Completed 03/21/97
Total Depth of Boring = 14.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB24

Figure C-24

LB-25

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow-stem Auger</u> Ground Elevation (ft): <u>29.7 (MSL)</u> Drilled By: <u>Cascade Drilling</u>	Water Level
0					SP	Yellow-brown, fine SAND with medium sand (medium dense, moist)	
5	1	b2	15				
	2	b2	14				
	3	b2	18				
10	4	b2	15		SP	Dark gray, fine to medium SAND with trace silt (medium dense, wet)	
	5	b2	27				
	6	b2	22		SP	Dark gray, fine to medium SAND (medium dense, wet) (moderate petroleum odor, slight sheen)	
15	7	b2	34				
	8	b2	38		SP	Yellow-brown, fine SAND with medium sand (dense, wet)	
	9	b2	12		SP-SM	Gray, fine SAND with silt (medium dense, wet)	
20	10	b2	18		ML	Gray, sandy SILT (very stiff, moist)	
	11	b2	18				
	12	b2	16				
	13	b2	16				
25	14	b2	16				
	15	b2	11		SM/ML	Gray, silty fine SAND to sandy SILT (medium dense to very stiff, wet)	
	16	b2	17				
30	17	b2	19		SP	Dark gray, fine to medium SAND (medium dense, wet)	
	18	b2	17				
	19	b2	11				
35	20	b2	14				
	21	b2	26		SM	Dark gray, silty medium SAND (medium dense, wet)	
	22	b2	25				
40	23	b2	31		SP	Dark gray, fine to medium SAND (medium dense to very dense, wet)	

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings where soil samples were not collected and should be considered approximate (shown with dashes).

231001.39 4/3/00 S:\SHARED\0231001\231TEMP.GPJ SOIL BORING LOG



Log of Boring LB-25

Figure C-25
(1 of 2)

BZTO104(e)023116

LB-25

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow-stem Auger</u> Ground Elevation (ft): <u>29.7 (MSL)</u> Drilled By: <u>Cascade Drilling</u>	Water Level
40	24	b2	23				
25	b2	22				Wood fragments at 41 to 44 ft.	
26	b2	55					
27	b2	58					
28	b2	60					
29	b2	36			SM	Dark gray, silty, medium SAND with fine sand (medium dense, wet)	
30	b2	48			SP	Dark gray, fine to medium SAND with wood fragments (dense, wet)	
31	b2	28			SP-SM	Dark gray, fine and fine to medium SAND with silt (medium dense to dense, wet)	
32	b2	20					
33	b2	42			SP	Dark gray, fine to medium SAND (medium dense to dense, wet)	
34	b2	47					
35	b2	27					
36	b2	16					
37	b2	20					
38	b2	26					
39	b2	43					
40	b2	37					
41	b2	46					
42	b2	26					
43	b2	21					
44	b2	33					
45	b2	26					
46	b2	41					
47	b2	27					

Boring Completed 02/19/99
Total Depth of Boring = 75.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings where soil samples were not collected and should be considered approximate (shown with dashes).



Log of Boring LB-25

Figure C-25
(2 of 2)

LB121

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger
0	1	a					Ground Elevation (ft): 28.0 (MSL)
							Drilled by: Cascade Drilling
1	2	a2	41	0.0		AC	ASPHALT (0.5 ft thick)
2	3	a2	44	0.0		GP	Sandy GRAVEL (base course fill)
3	4	a2	14	0.0		SP	Brown, fine to medium SAND with trace gravel and occasional silt lenses (loose to medium dense, moist to wet)
4	5	a2	24	0.0			color becomes gray brown @ 7.5 ft
5	6	a2	21	0.0			color becomes dark brown @ 12.5 ft
6	7	a2	26	0.0			
7	8	a2	23	0.0			
8	9	a2	24	0.0			
9	10	a2	19	0.0			
10	11	a2	14	0.0		ML	Gray to green-gray SILT with clay and trace sand (stiff, wet)

▽
ATD

Boring Completed 03/17/97
Total Depth of Boring = 22.5 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring LB121

Figure C-26

LB122

SAMPLE DATA

SOIL PROFILE

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger
0							Ground Elevation (ft): 26.3 (MSL)
1	a	d					Drilled by: Cascade Drilling
2	a2	a2	33	0.0			ASPHALT (3 inch thick)
3	a2	a2	36	0.0			Brown, sandy GRAVEL with silt (dense, moist) (base course fill)
4	a2	a2	33	0.0			Brown, fine to medium SAND (medium dense, dry to wet)

∇
ATD

Boring Completed 03/17/97
Total Depth of Boring = 9.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).

Time Oil/Phase II RI Rpt | T: \231\001\037\PH2RI\BORINGS\FIGC-27.DWG (A) 4/3/2000



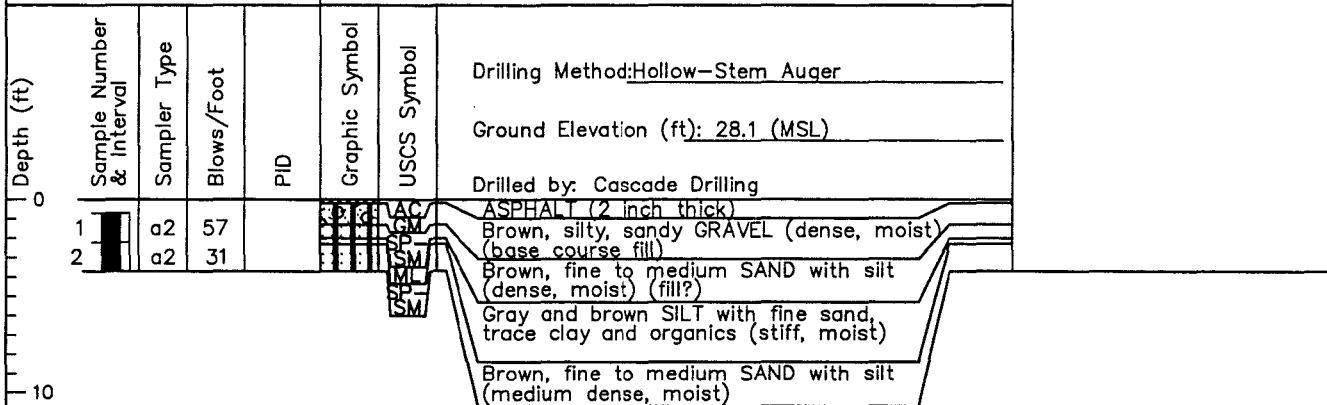
Boring LB122

Figure C-27

LS1

SAMPLE DATA

SOIL PROFILE



Boring Completed 10/25/96
 Total Depth of Boring = 3.7 ft.
 No Groundwater Encountered During Drilling

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



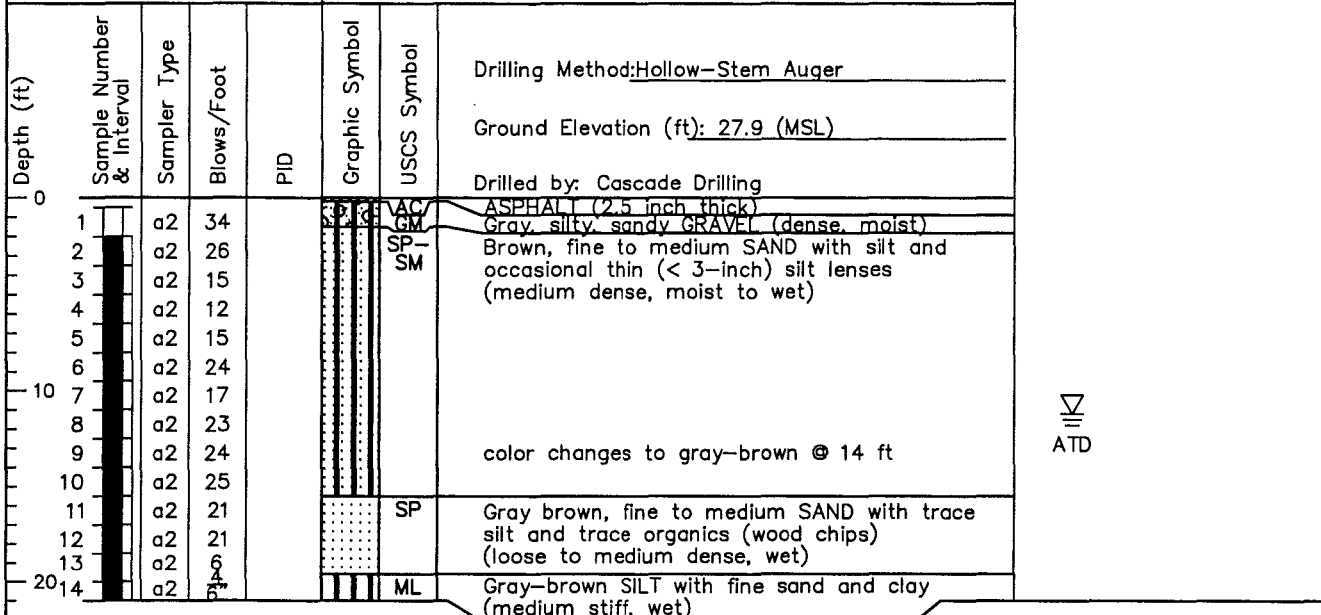
Boring LS1

Figure C-28

LS2

SAMPLE DATA

SOIL PROFILE



Boring Completed 10/23/96
Total Depth of Boring = 21.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



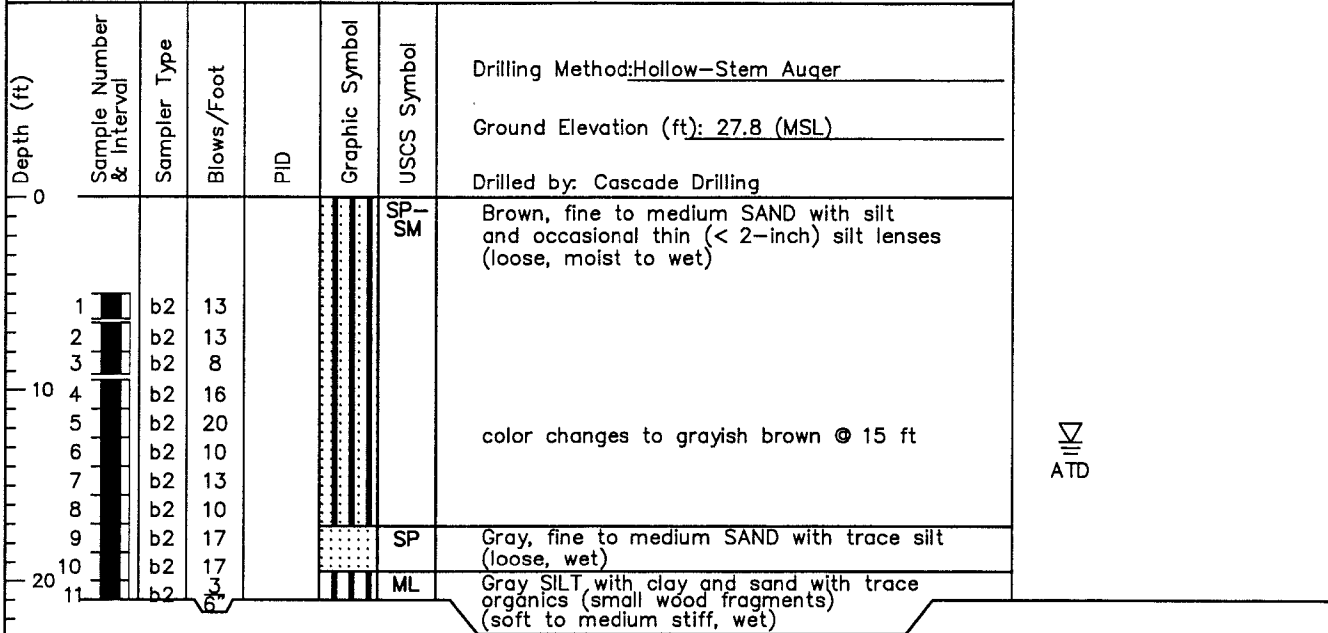
Boring LS2

Figure C-29

LS3

SAMPLE DATA

SOIL PROFILE



Boring Completed 10/24/96
Total Depth of Boring = 21.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



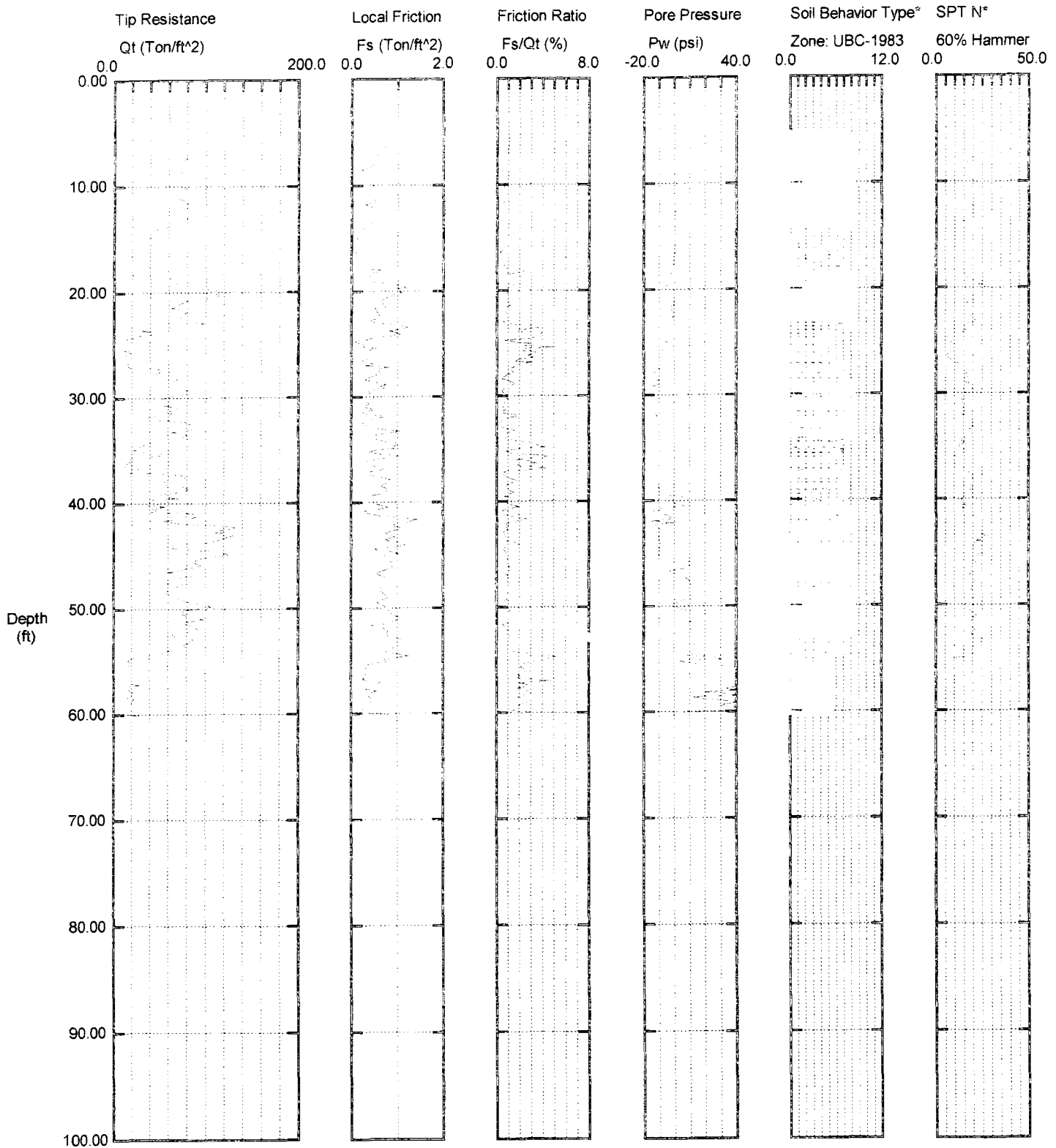
Boring LS3

Figure C-30

LANDAU / P111-01 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG56
Cone Used: 4CH

CPT Date/Time: 07-12-02 11:33
Location: P111-01 NW TERM
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

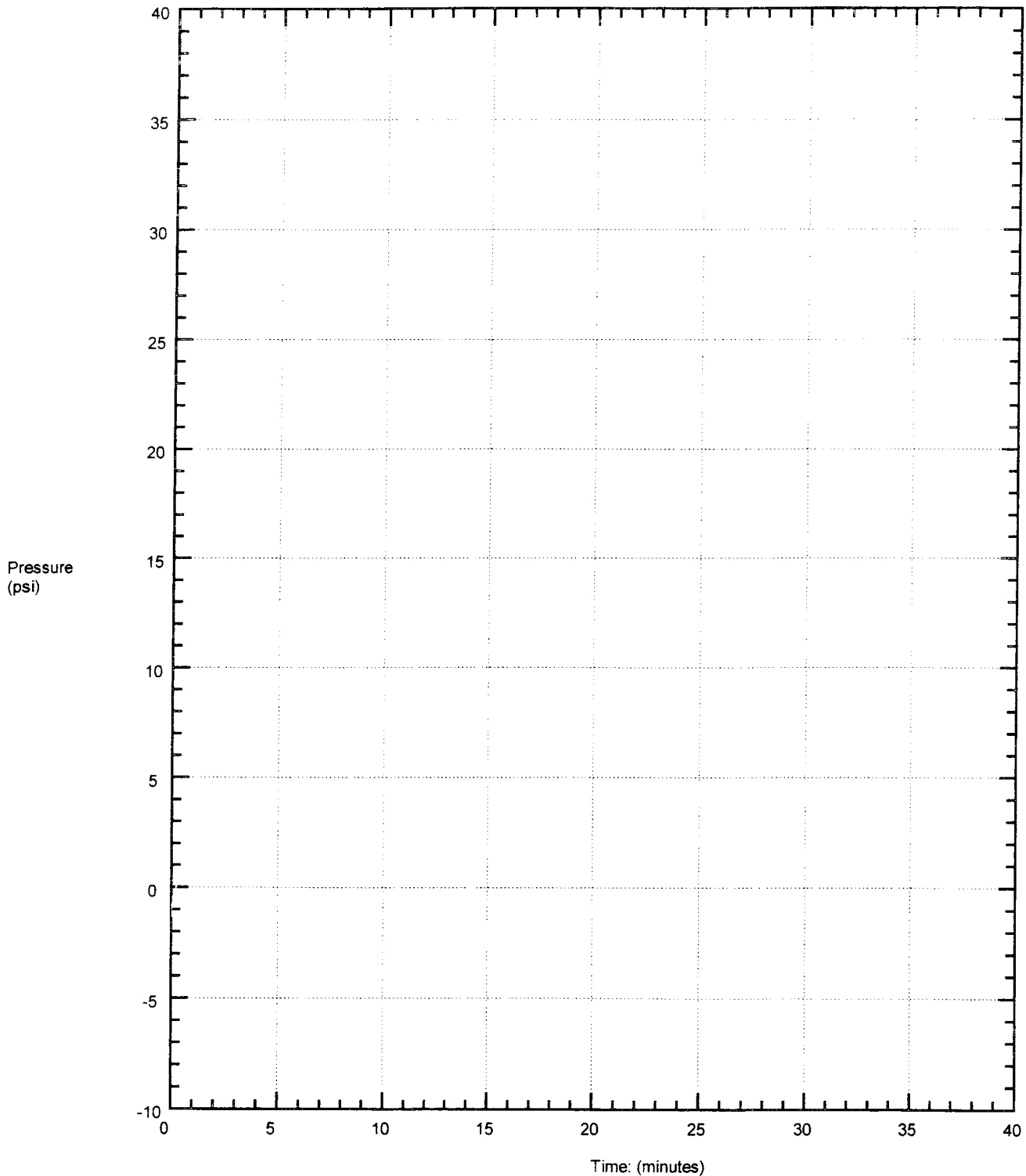
LANDAU / P111-01 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG56
Cone Used: 4CH

CPT Date/Time: 07-12-02 11:33
Location: P111-01 NW TERM
Job Number: LANDAU/231009.31

Selected Depth(s)
(feet)

25.591

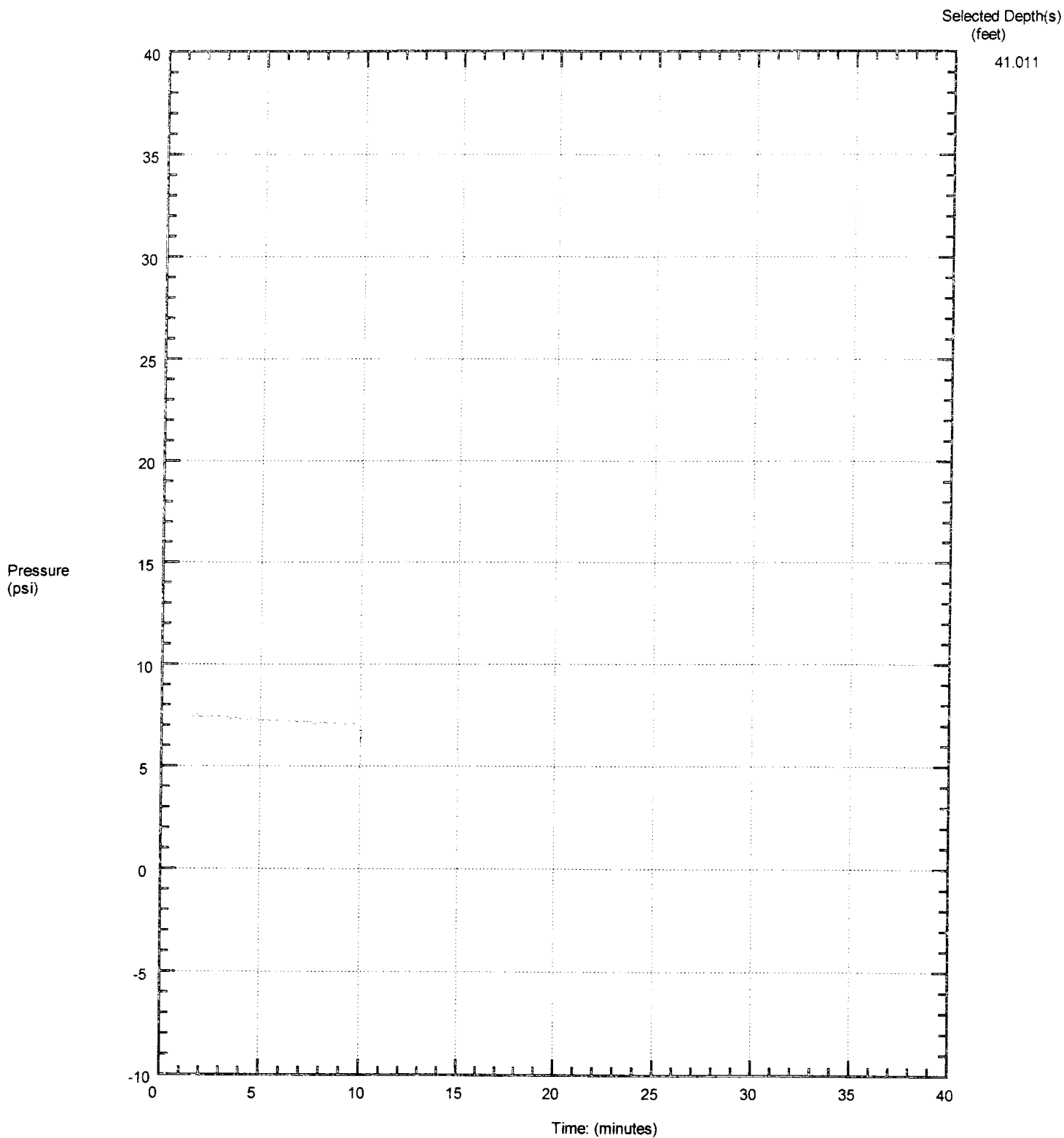


Maximum Pressure = 1.19 psi
Hydrostatic Pressure

LANDAU / P111-01 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG56
Cone Used: 4CH

CPT Date/Time: 07-12-02 11:33
Location: P111-01 NW TERM
Job Number: LANDAU/231009.31

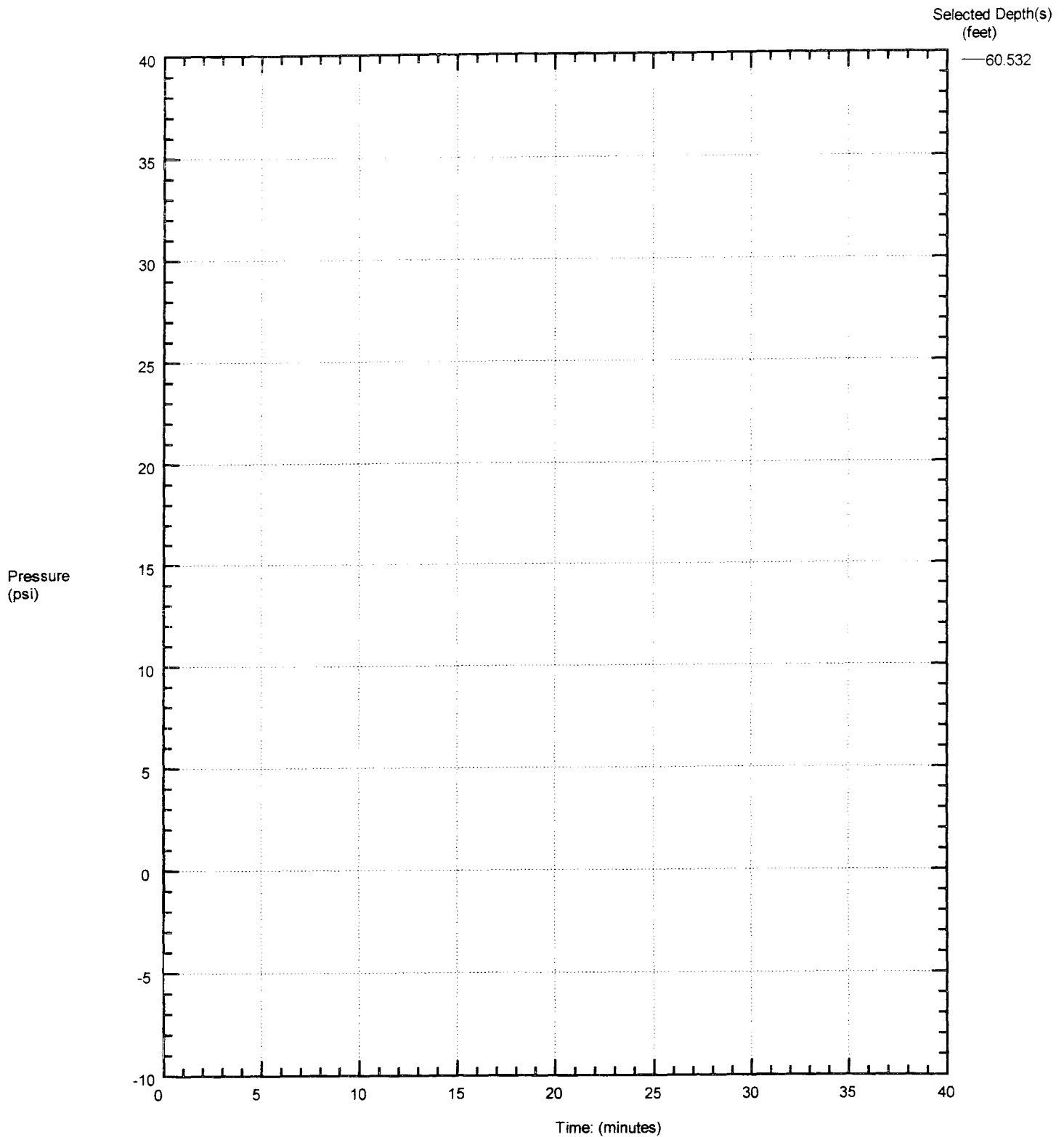


Maximum Pressure = 7.518 psi
Hydrostatic Pressure

LANDAU / P111-01 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG56
Cone Used: 4CH

CPT Date/Time: 07-12-02 11:33
Location: P111-01 NW TERM
Job Number: LANDAU/231009.31

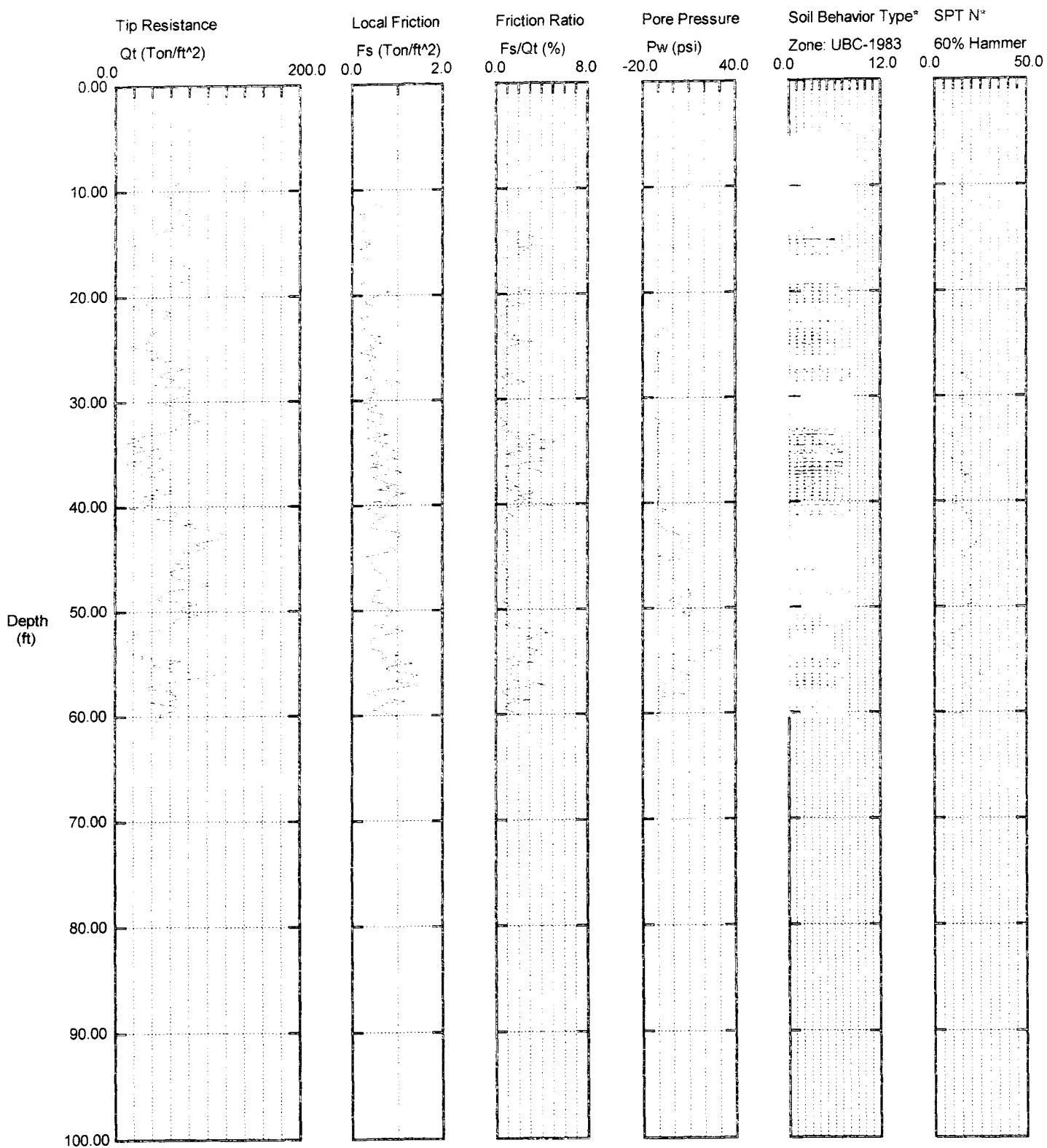


Maximum Pressure = 16.154 psi
Hydrostatic Pressure

LANDAU / P111-02 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG55
Cone Used: 4CH

CPT Date/Time: 07-12-02 08:40
Location: P111-02 NW TERM
Job Number: LANDAU/231009 31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

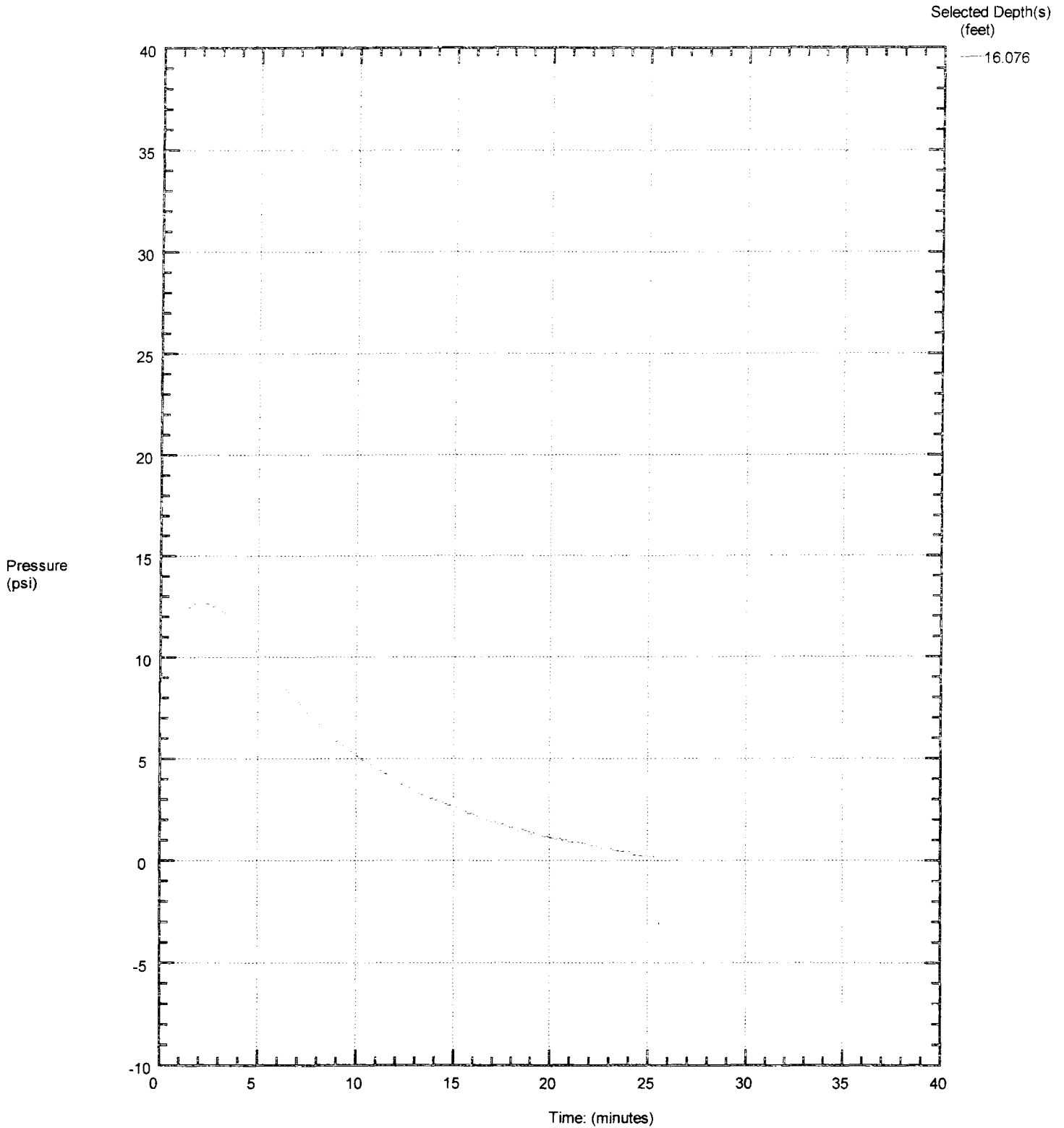
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-02 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG55
Cone Used: 4CH

CPT Date/Time: 07-12-02 08:40
Location: P111-02 NW TERM
Job Number: LANDAU/231009.31

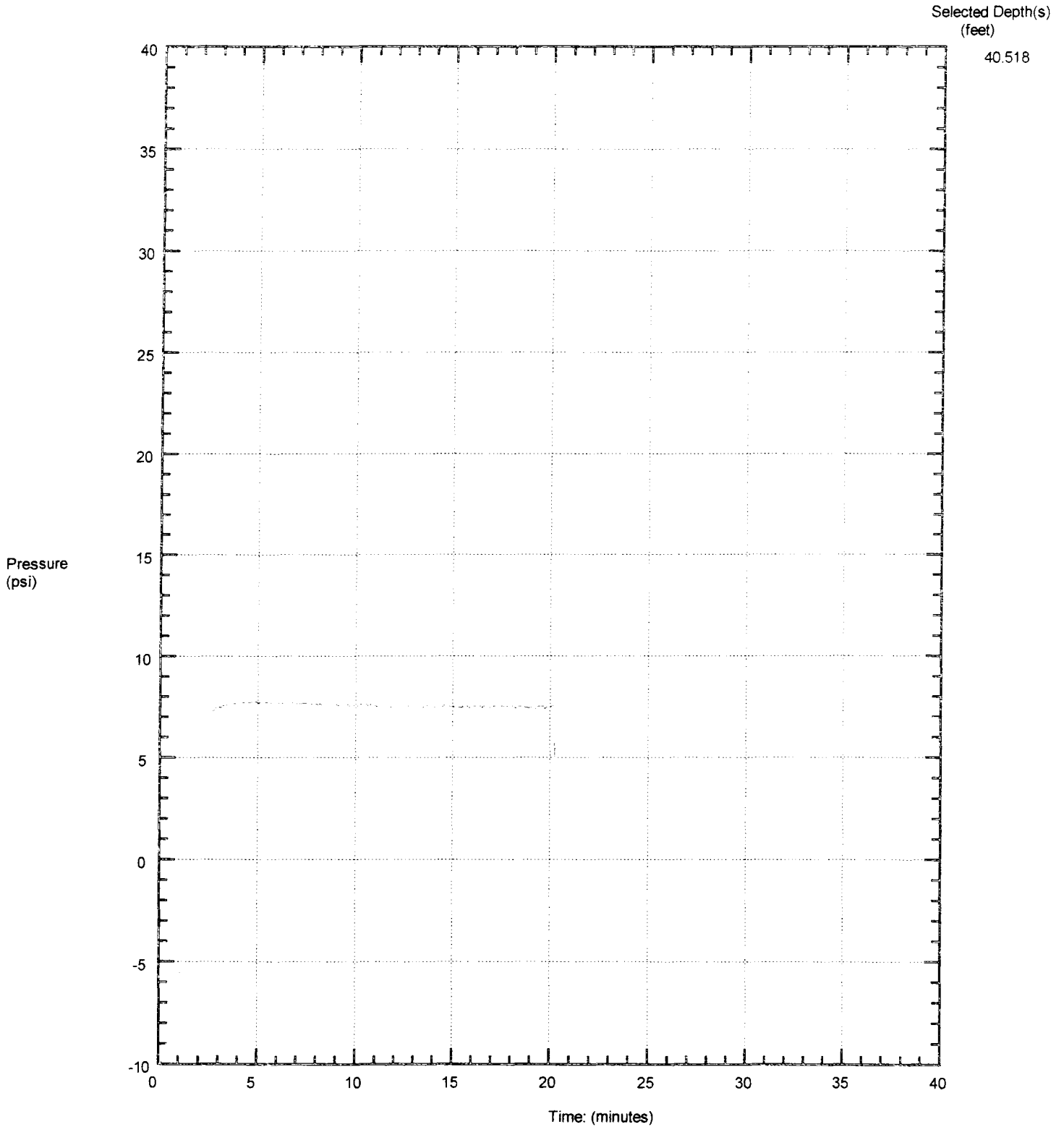


Maximum Pressure = 12.95 psi
Hydrostatic Pressure

LANDAU / P111-02 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG55
Cone Used: 4CH

CPT Date/Time: 07-12-02 08:40
Location: P111-02 NW TERM
Job Number: LANDAU/231009.31

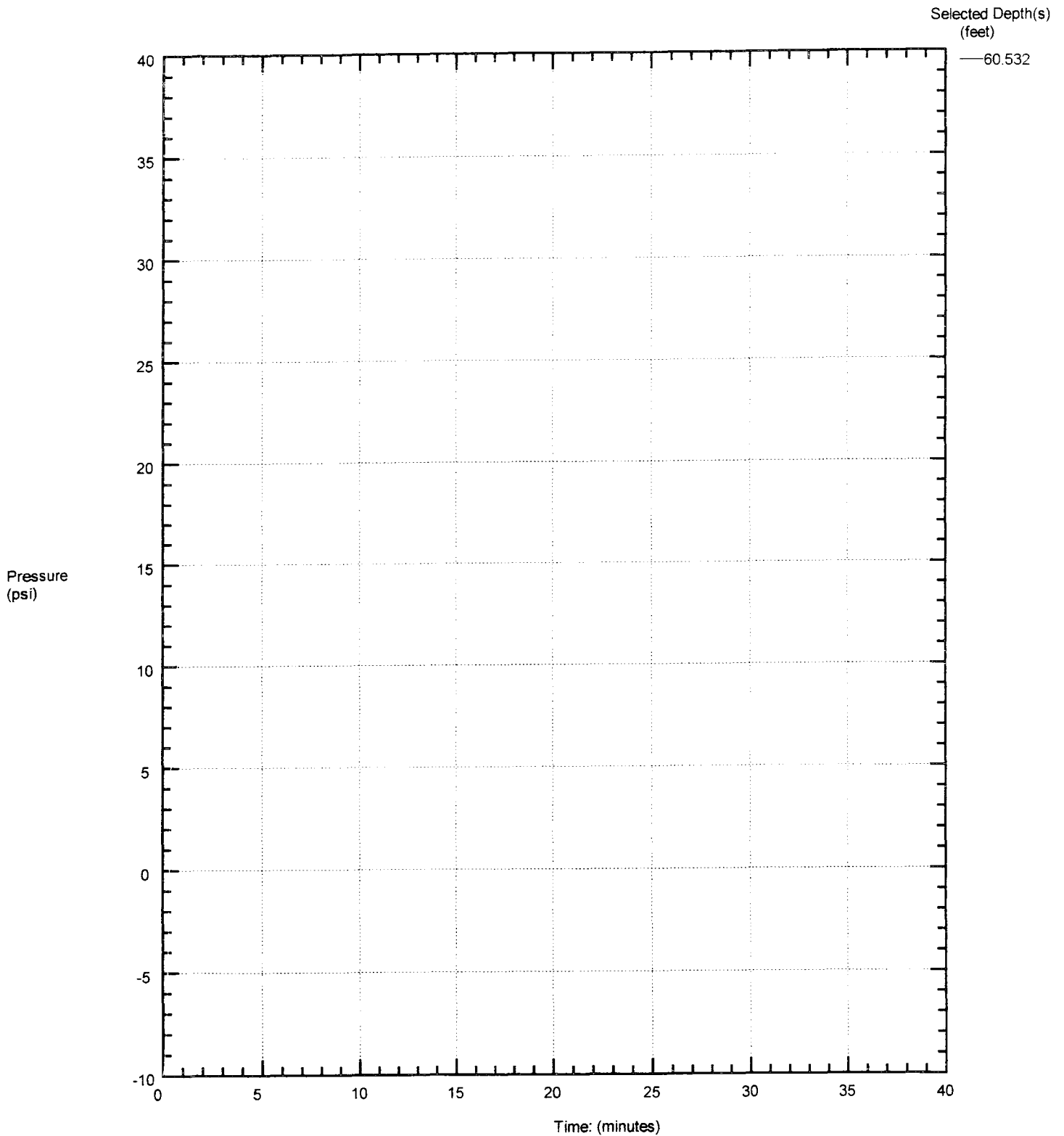


Maximum Pressure = 7.741 psi
Hydrostatic Pressure

LANDAU / P111-02 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG55
Cone Used: 4CH

CPT Date/Time: 07-12-02 08:40
Location: P111-02 NW TERM
Job Number: LANDAU/231009.31

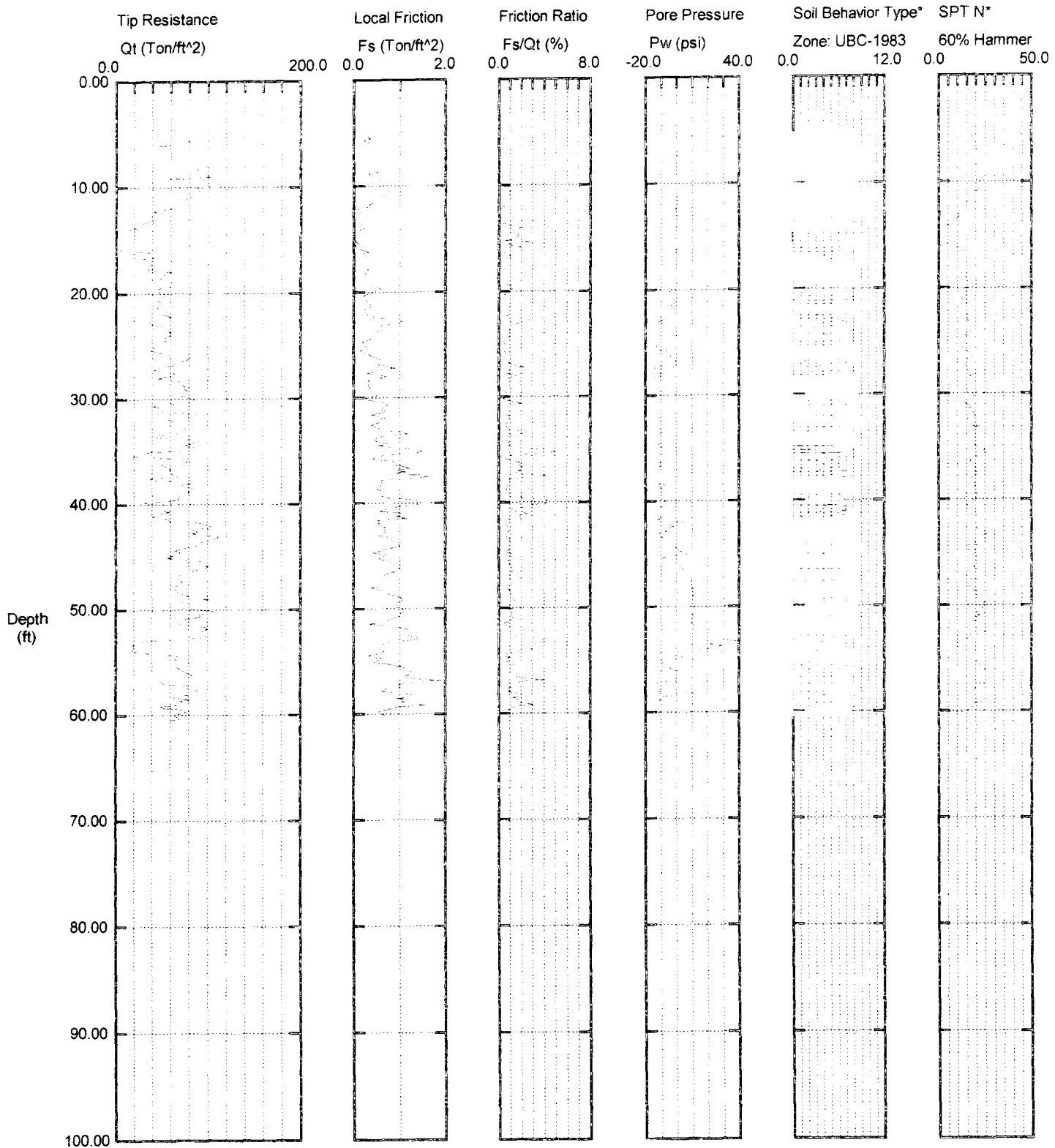


Maximum Pressure = 17.009 psi
Hydrostatic Pressure

LANDAU / P111-03 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG57
Cone Used: 4CH

CPT Date/Time: 07-12-02 13:40
Location: P111-03 NW TERM
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

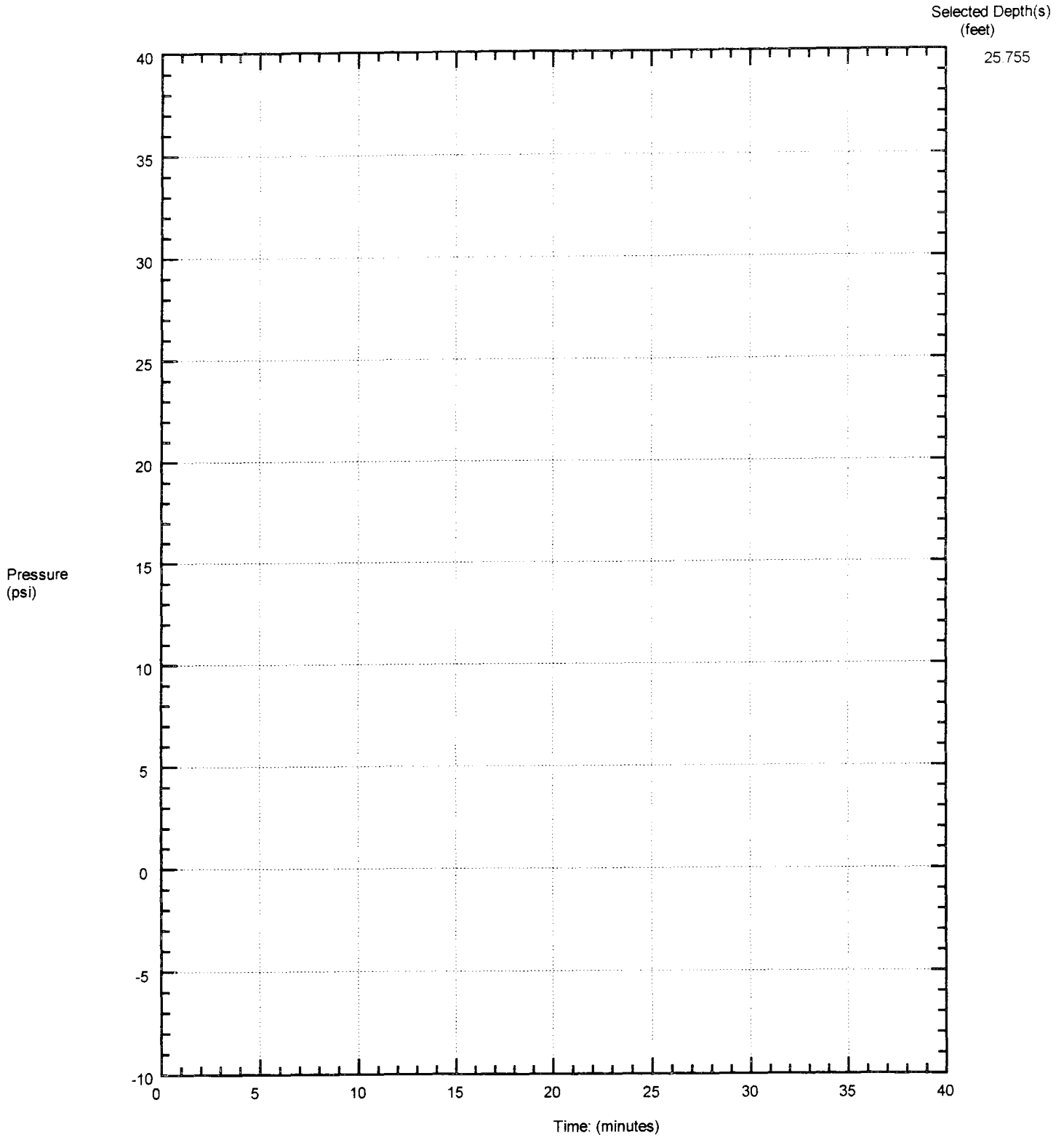
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-03 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG57
Cone Used: 4CH

CPT Date/Time: 07-12-02 13:40
Location: P111-03 NW TERM
Job Number: LANDAU/231009.31

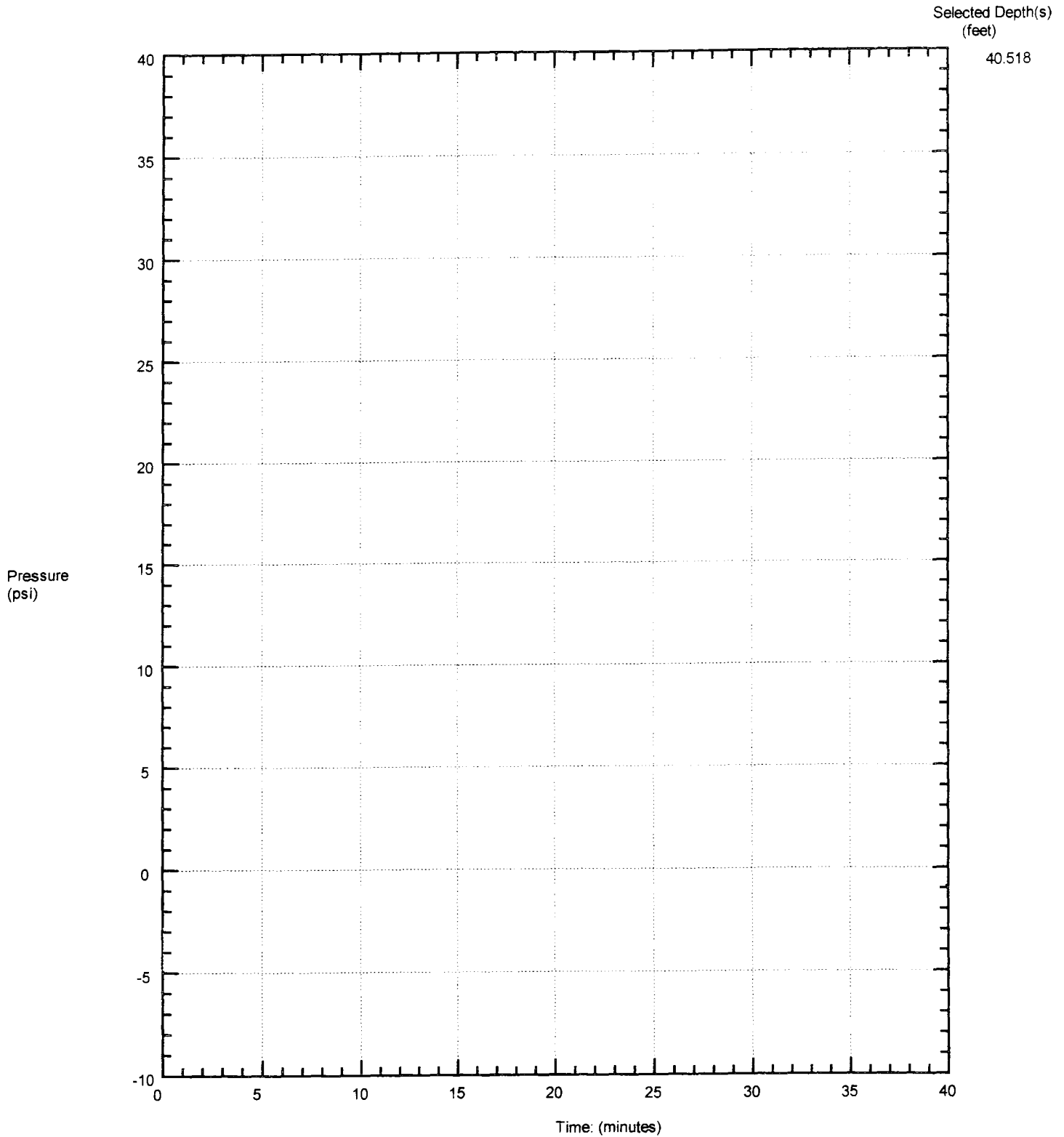


Maximum Pressure = 0.793 psi
Hydrostatic Pressure :

LANDAU / P111-03 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG57
Cone Used: 4CH

CPT Date/Time: 07-12-02 13:40
Location: P111-03 NW TERM
Job Number: LANDAU/231009.31

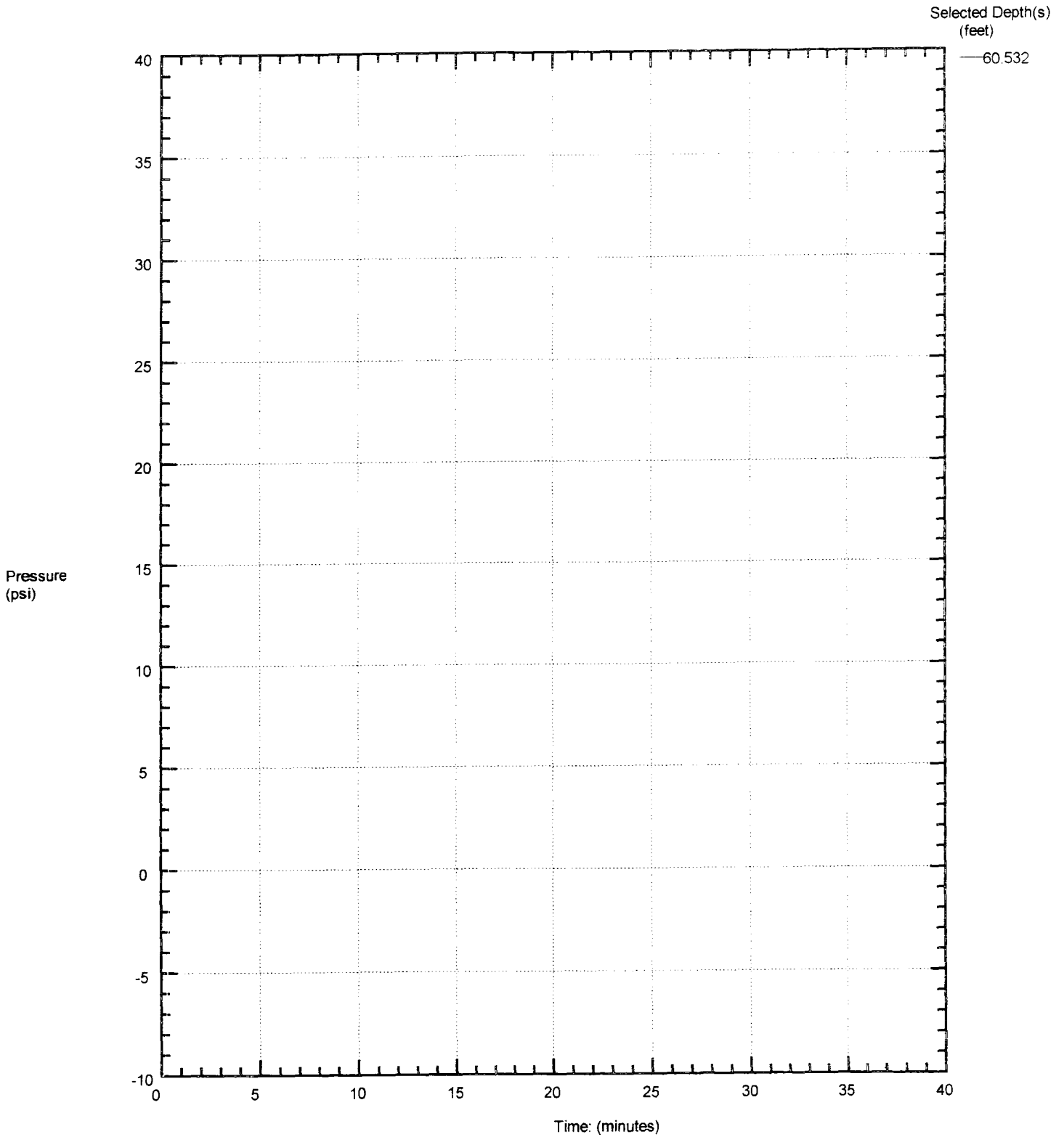


Maximum Pressure = 6.592 psi
Hydrostatic Pressure

LANDAU / P111-03 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG57
Cone Used: 4CH

CPT Date/Time: 07-12-02 13:40
Location: P111-03 NW TERM
Job Number: LANDAU/231009.31



Maximum Pressure = 16.612 psi
Hydrostatic Pressure

LANDAU / P111-04 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH

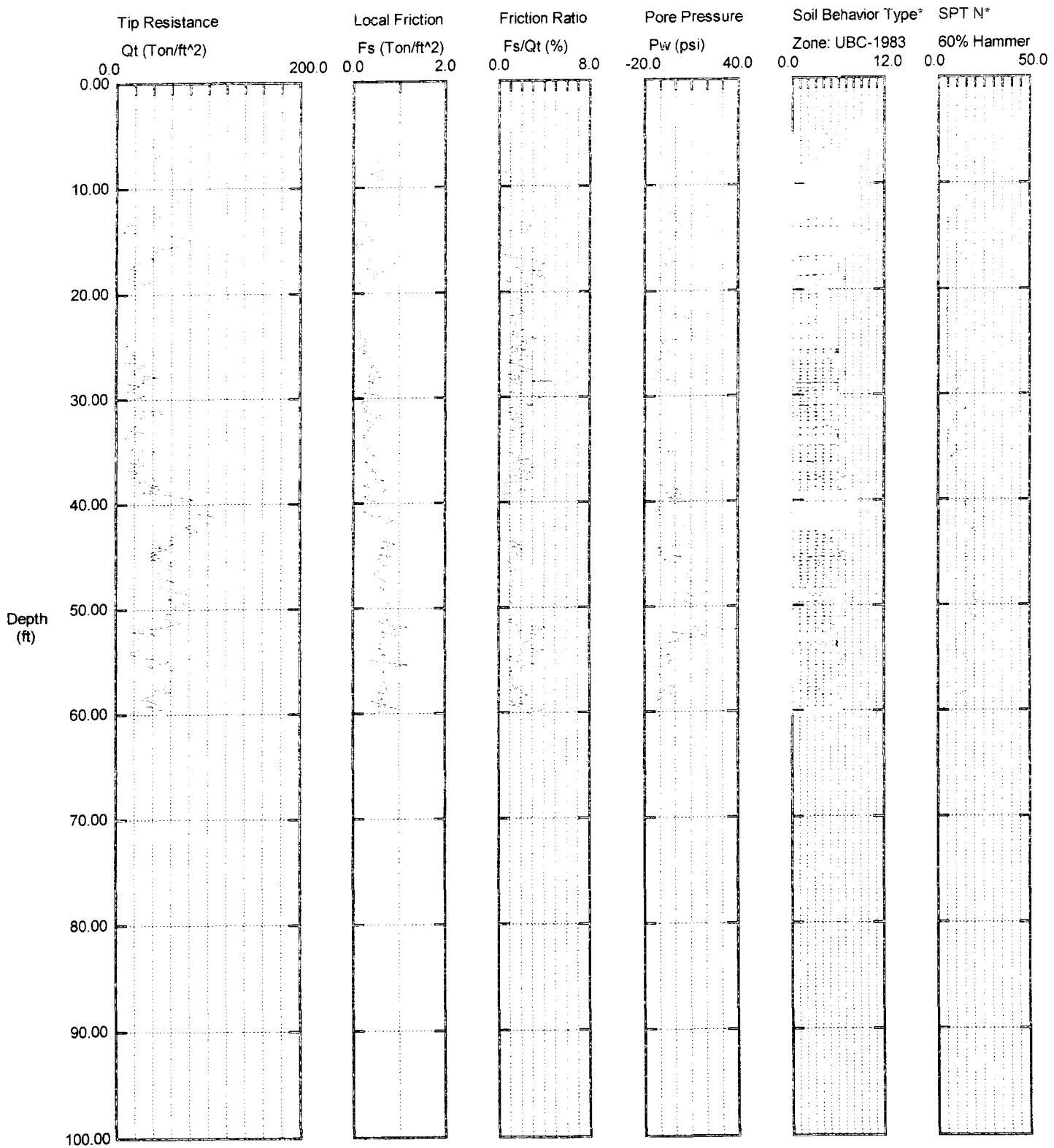
Sounding: FILG53

Cone Used: 4CH

CPT Date/Time: 07-12-02 06:51

Location: P111-04 NW TERM

Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

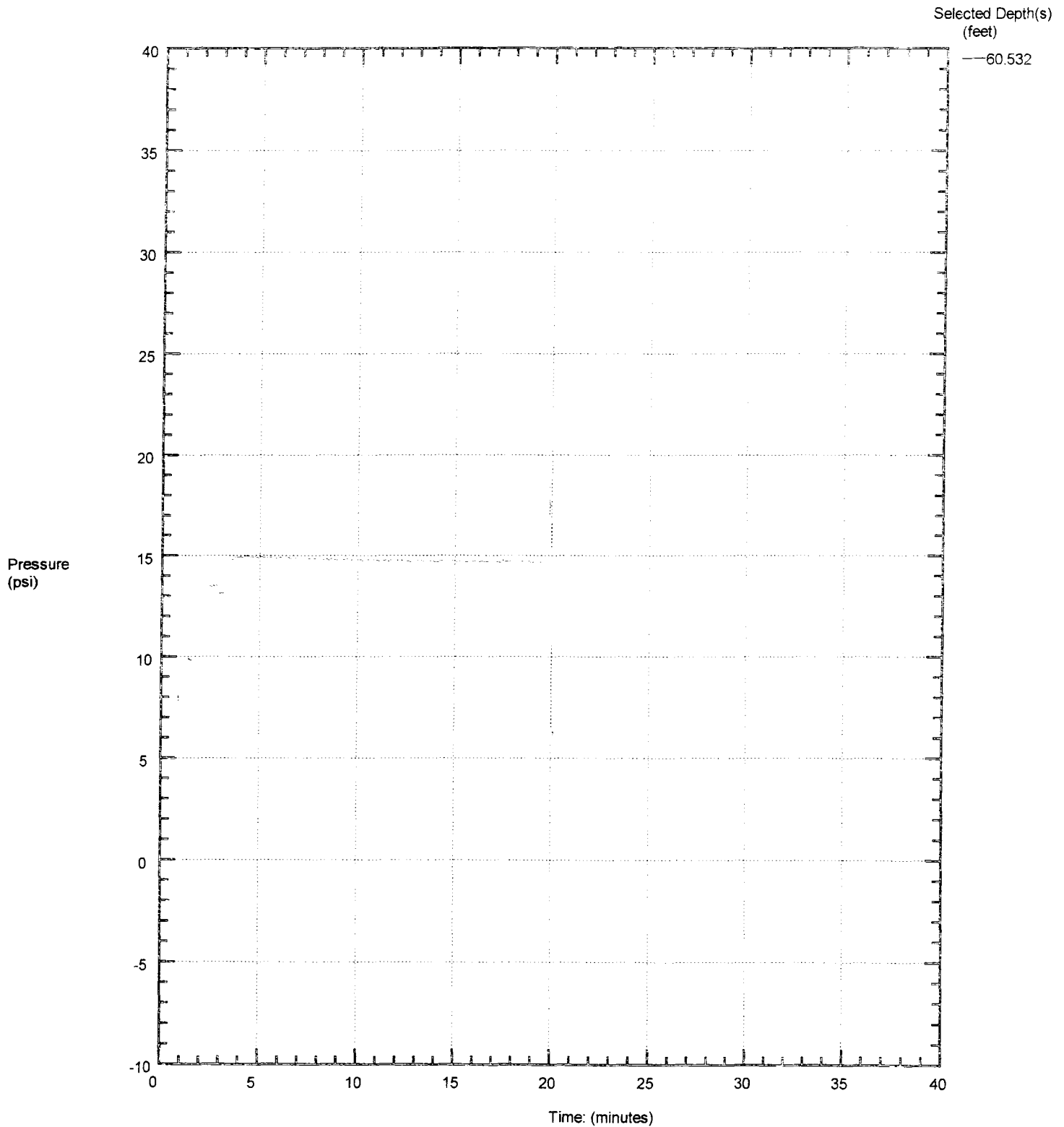
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-04 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG53
Cone Used: 4CH

CPT Date/Time: 07-12-02 06:51
Location: P111-04 NW TERM
Job Number: LANDAU/231009.31

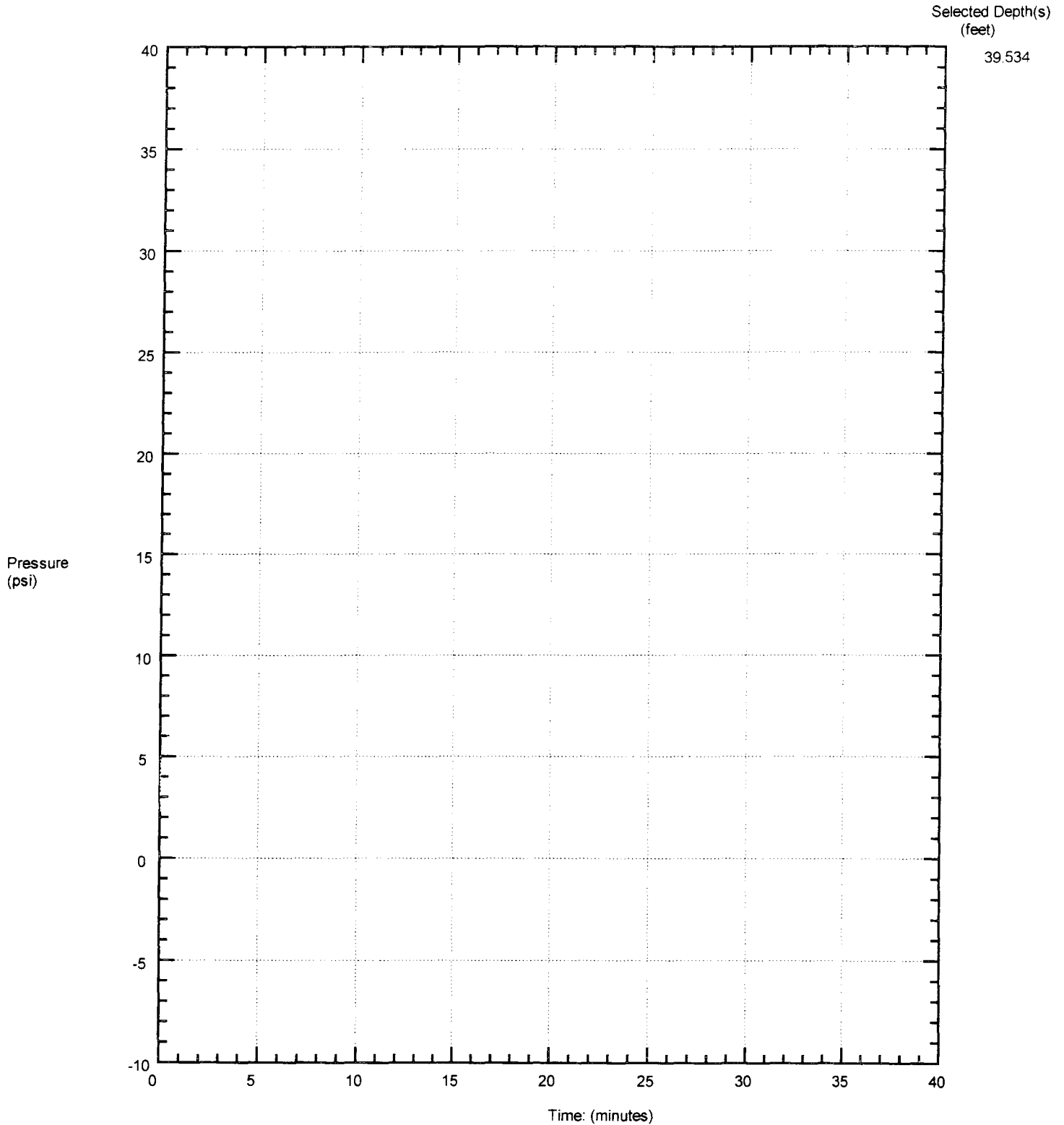


Maximum Pressure = 19.338 psi
Hydrostatic Pressure

LANDAU / P111-04 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG53
Cone Used: 4CH

CPT Date/Time: 07-12-02 06:51
Location: P111-04 NW TERM
Job Number: LANDAU/231009.31



Maximum Pressure = 6.368 psi
Hydrostatic Pressure :

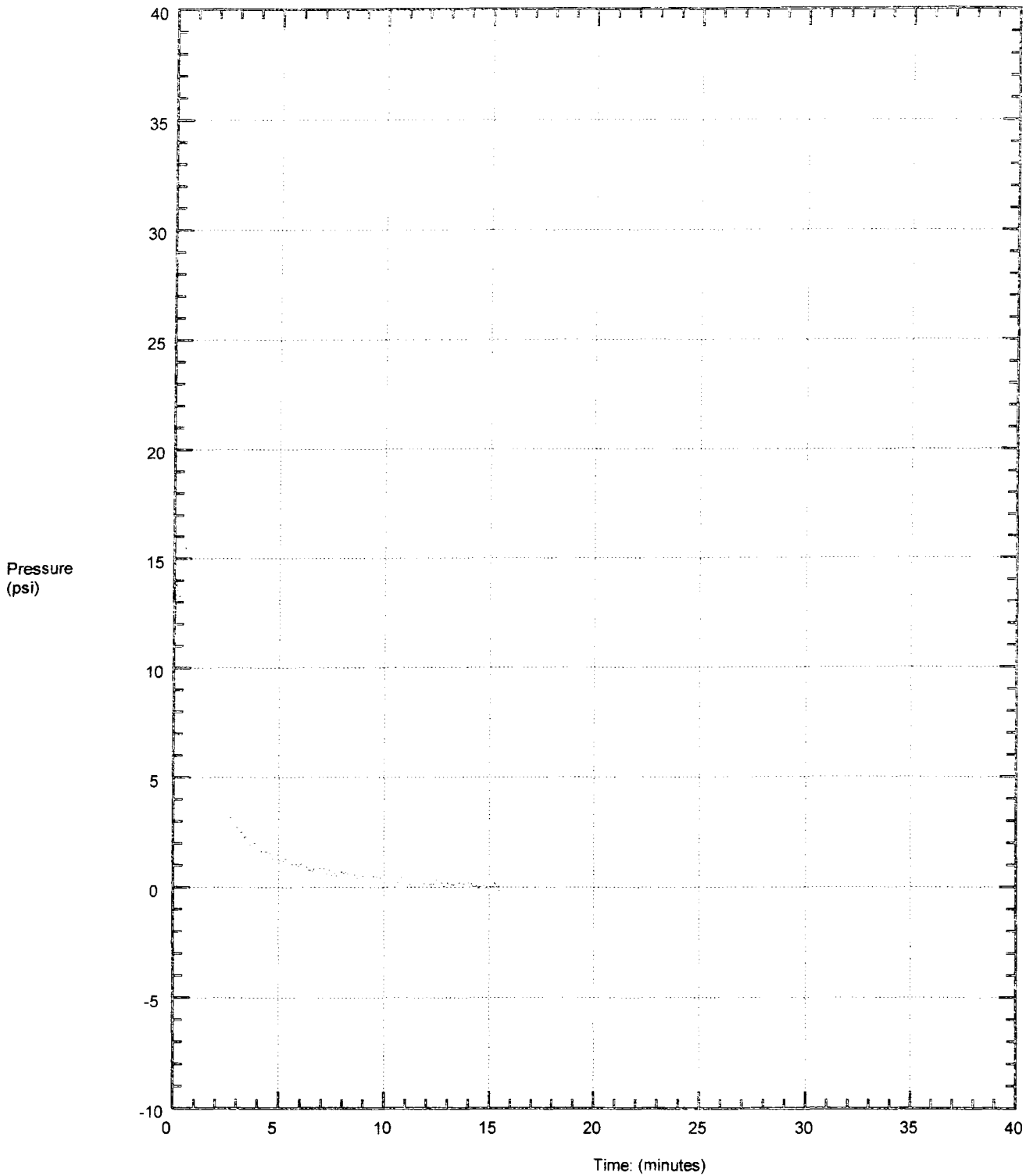
LANDAU / P111-04 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG53
Cone Used: 4CH

CPT Date/Time: 07-12-02 06:51
Location: P111-04 NW TERM
Job Number: LANDAU/231009.31

Selected Depth(s)
(feet)

24.606

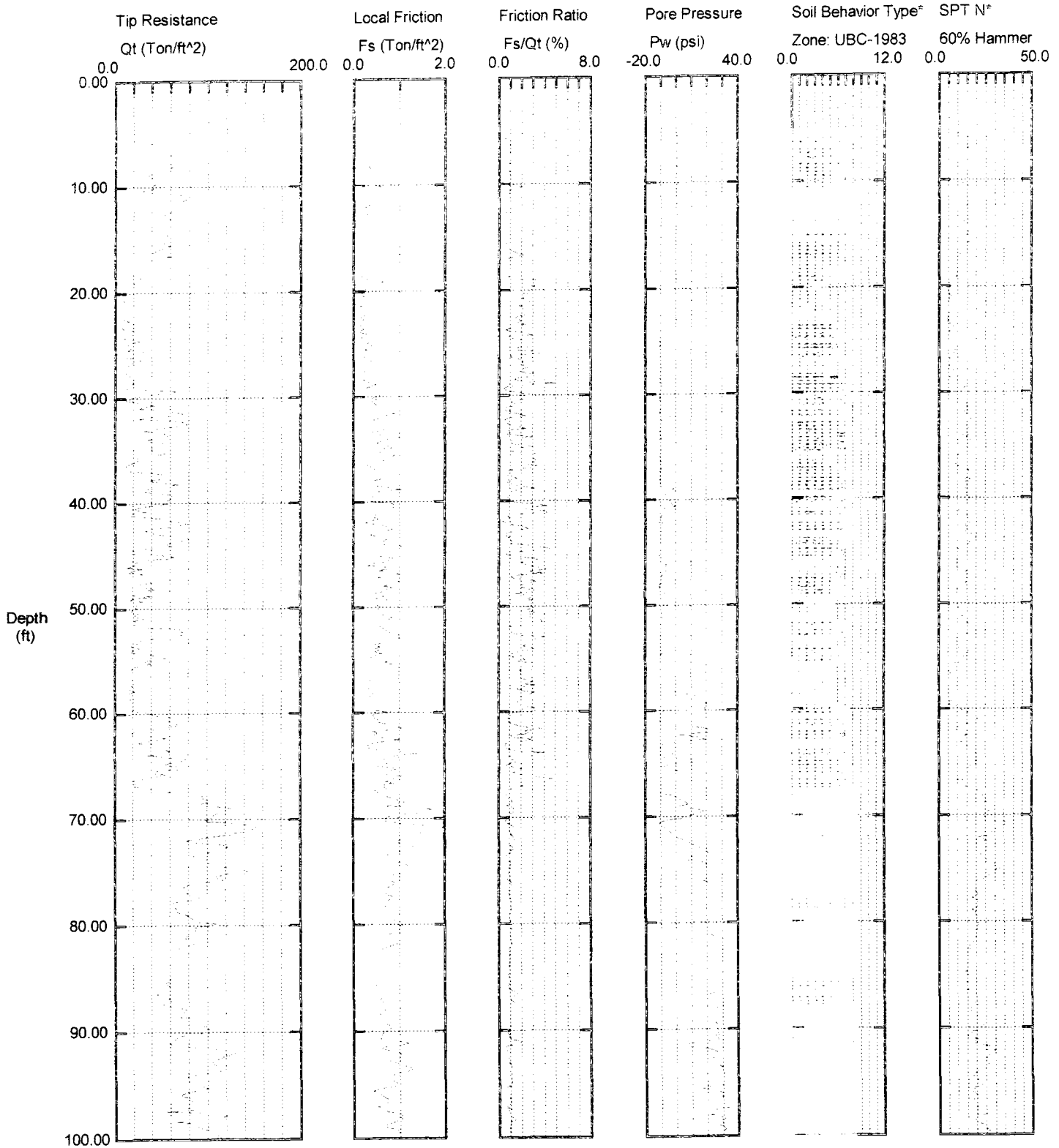


Maximum Pressure = 15.595 psi
Hydrostatic Pressure

LANDAU / P111-05 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG43
Cone Used: 4CH

CPT Date/Time: 07-10-02 06:33
Location: P111-05 NW TERM
Job Number: LANDAU/231009.31



Maximum Depth = 100.56 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

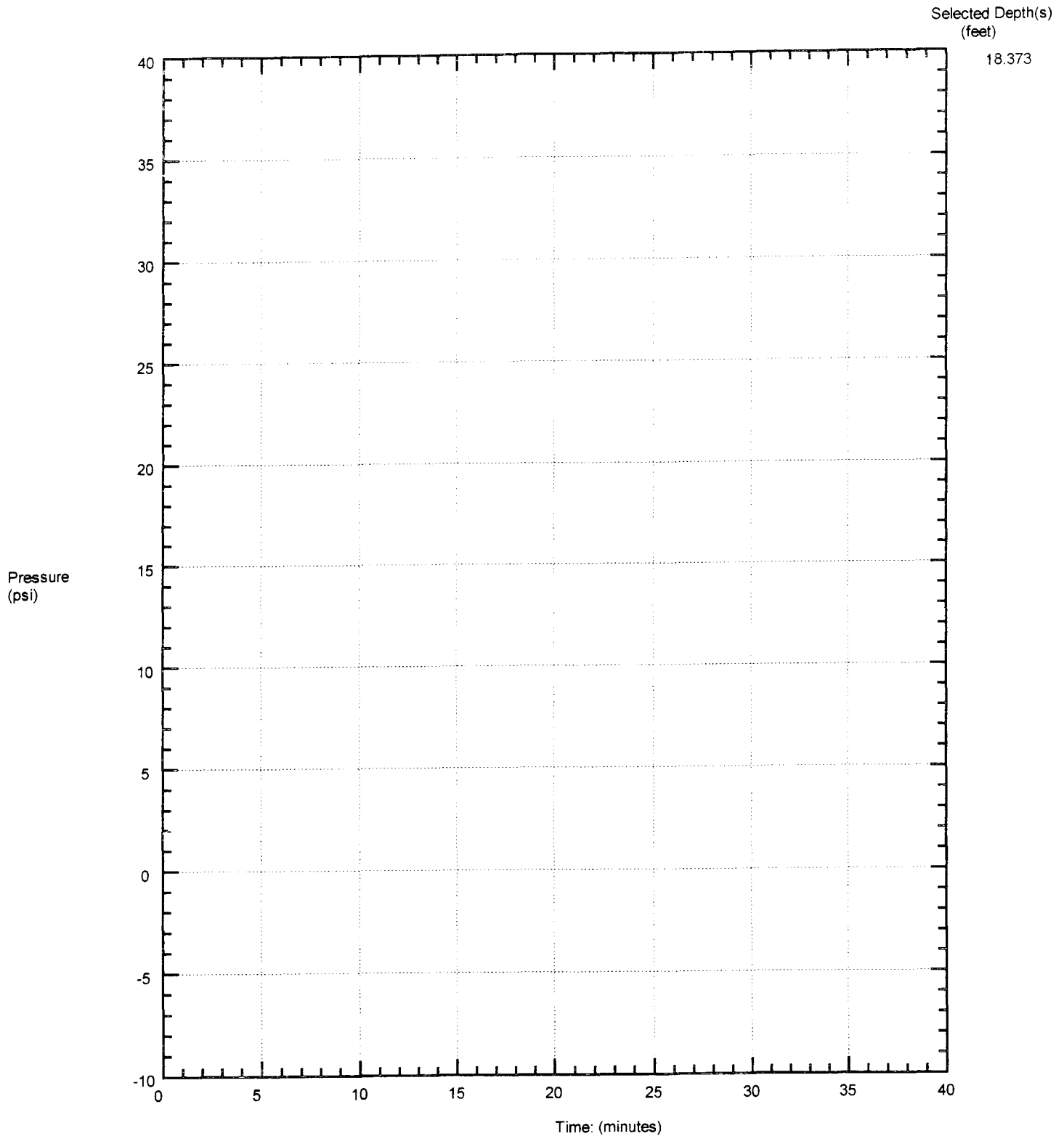
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-05 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG43
Cone Used: 4CH

CPT Date/Time: 07-10-02 06:33
Location: P111-05 NW TERMI
Job Number: LANDAU/231009.31

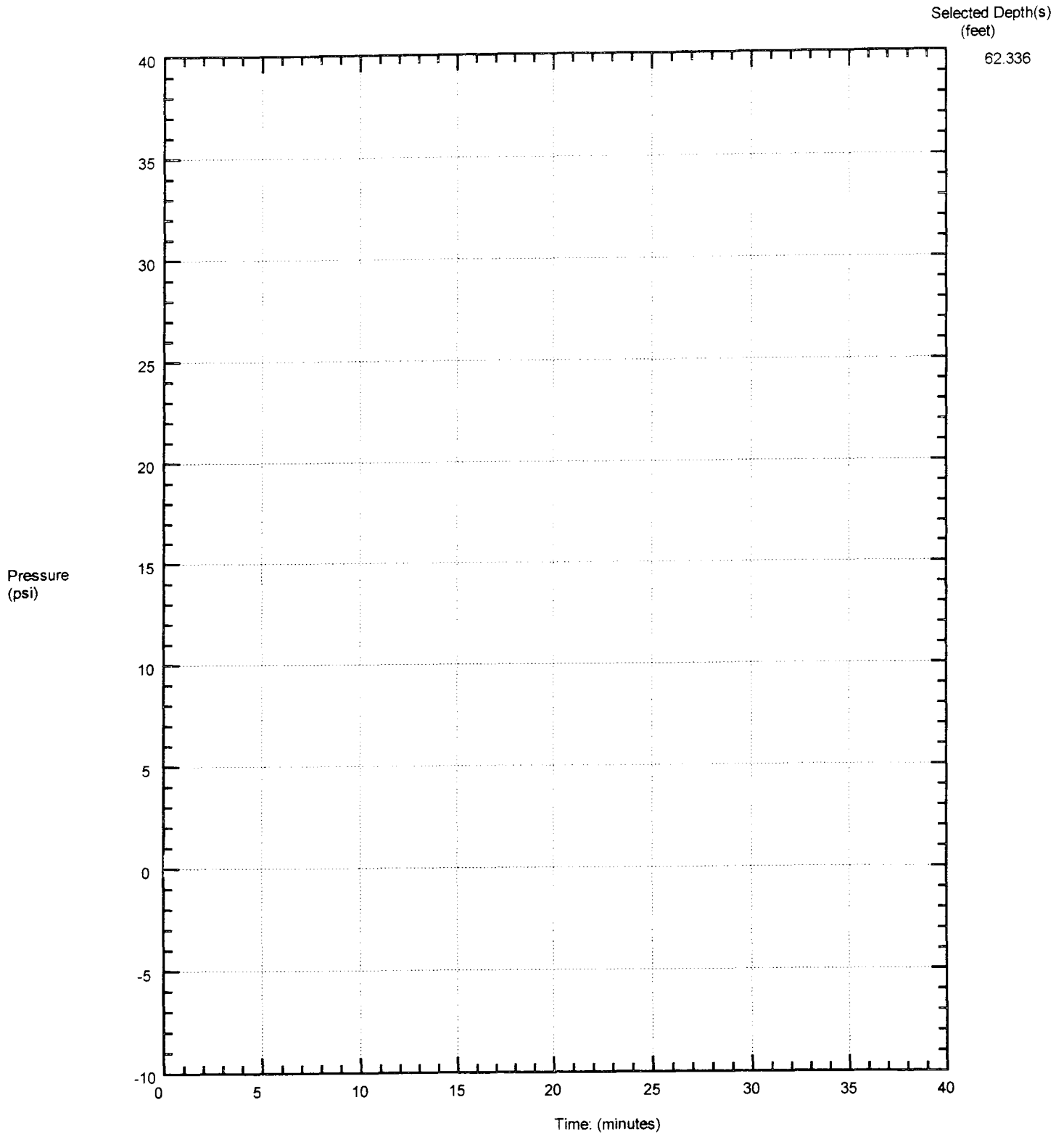


Maximum Pressure = 2.035 psi
Hydrostatic Pressure

LANDAU / P111-05 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG43
Cone Used: 4CH

CPT Date/Time: 07-10-02 06:33
Location: P111-05 NW TERM!
Job Number: LANDAU/231009.31

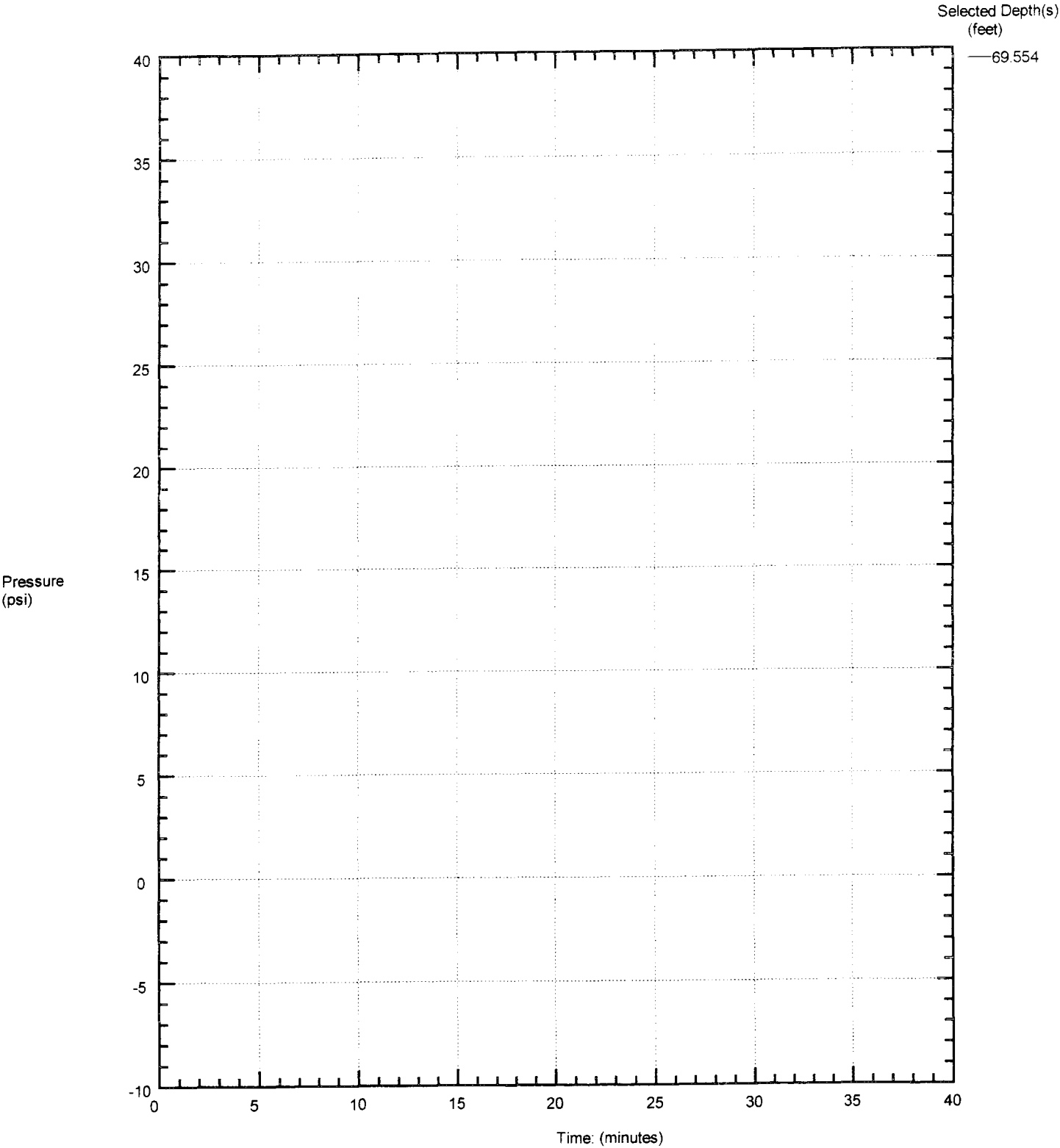


Maximum Pressure = 15.94 psi
Hydrostatic Pressure

LANDAU / P111-05 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG43
Cone Used: 4CH

CPT Date/Time: 07-10-02 06:33
Location: P111-05 NW TERMI
Job Number: LANDAU/231009.31

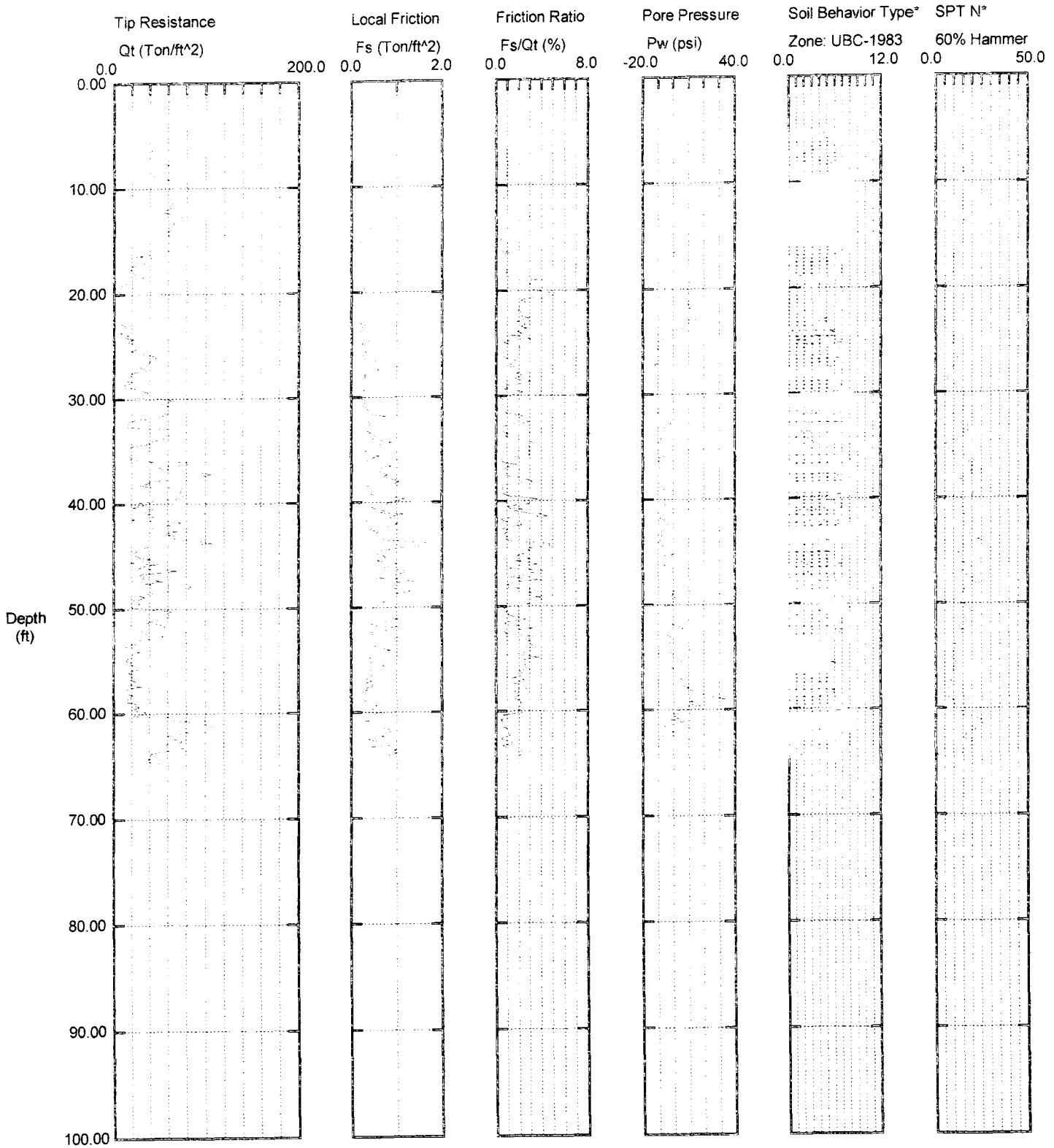


Maximum Pressure = 19.898 psi
Hydrostatic Pressure

LANDAU / P111-06 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG58
Cone Used: 4CH

CPT Date/Time: 07-15-02 06:13
Location: P111-06 NW TERMI
Job Number: LANDAU/231009.31



1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

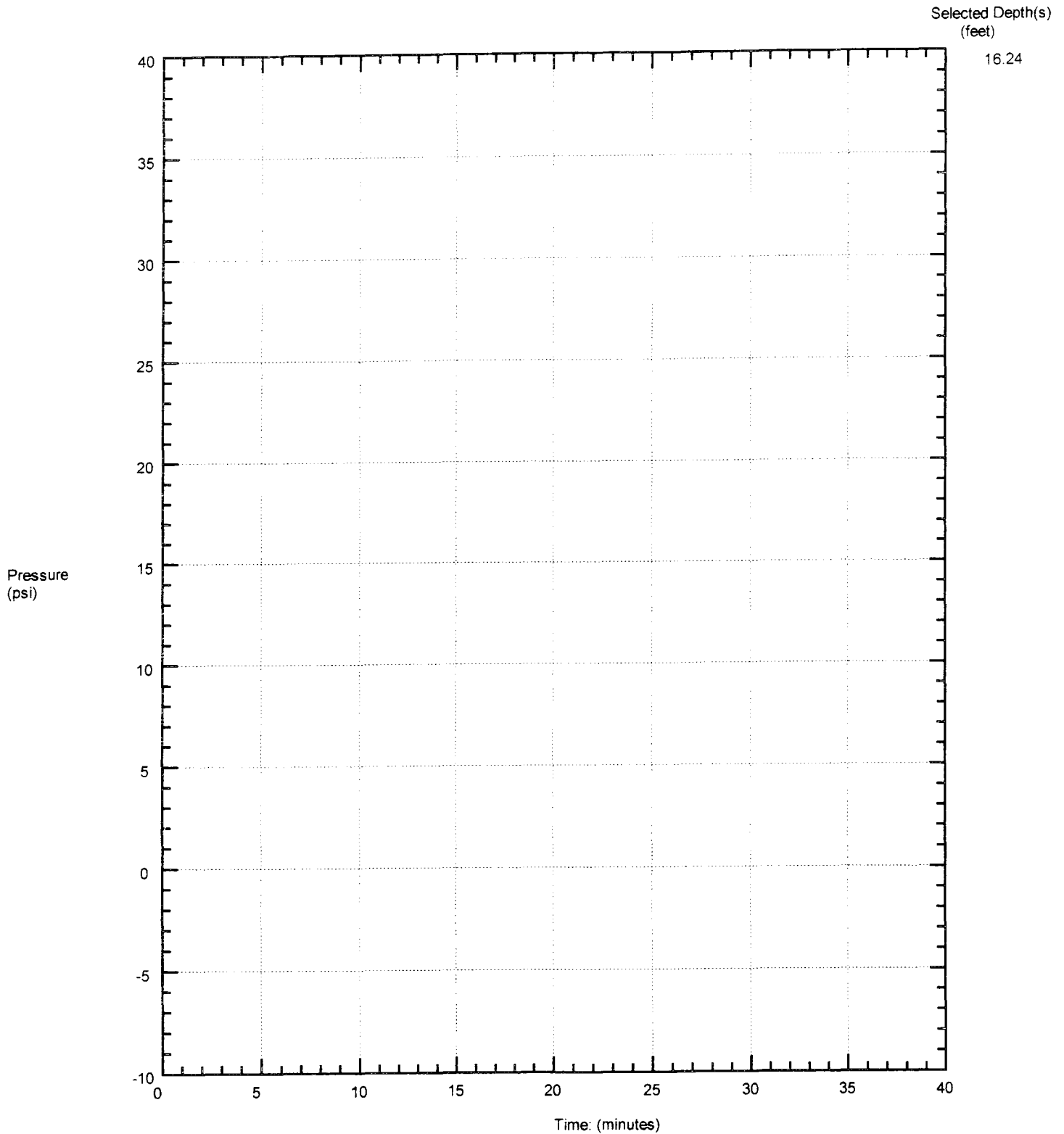
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-06 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG58
Cone Used: 4CH

CPT Date/Time: 07-15-02 06:13
Location: P111-06 NW TERMI
Job Number: LANDAU/231009.31

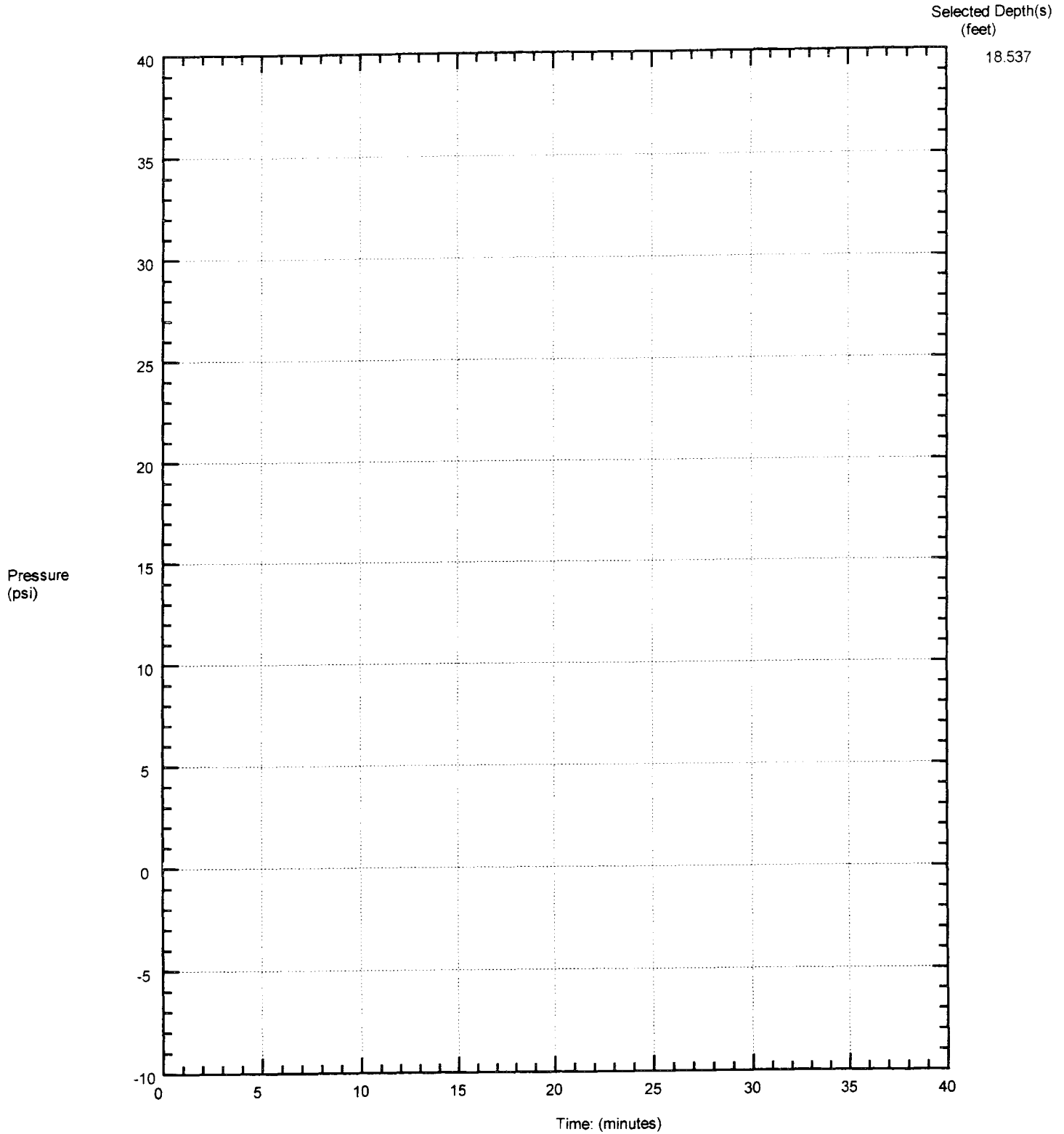


Maximum Pressure = 2.675 psi
Hydrostatic Pressure

LANDAU / P111-06 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG58
Cone Used: 4CH

CPT Date/Time: 07-15-02 06:13
Location: P111-06 NW TERMI
Job Number: LANDAU/231009.31

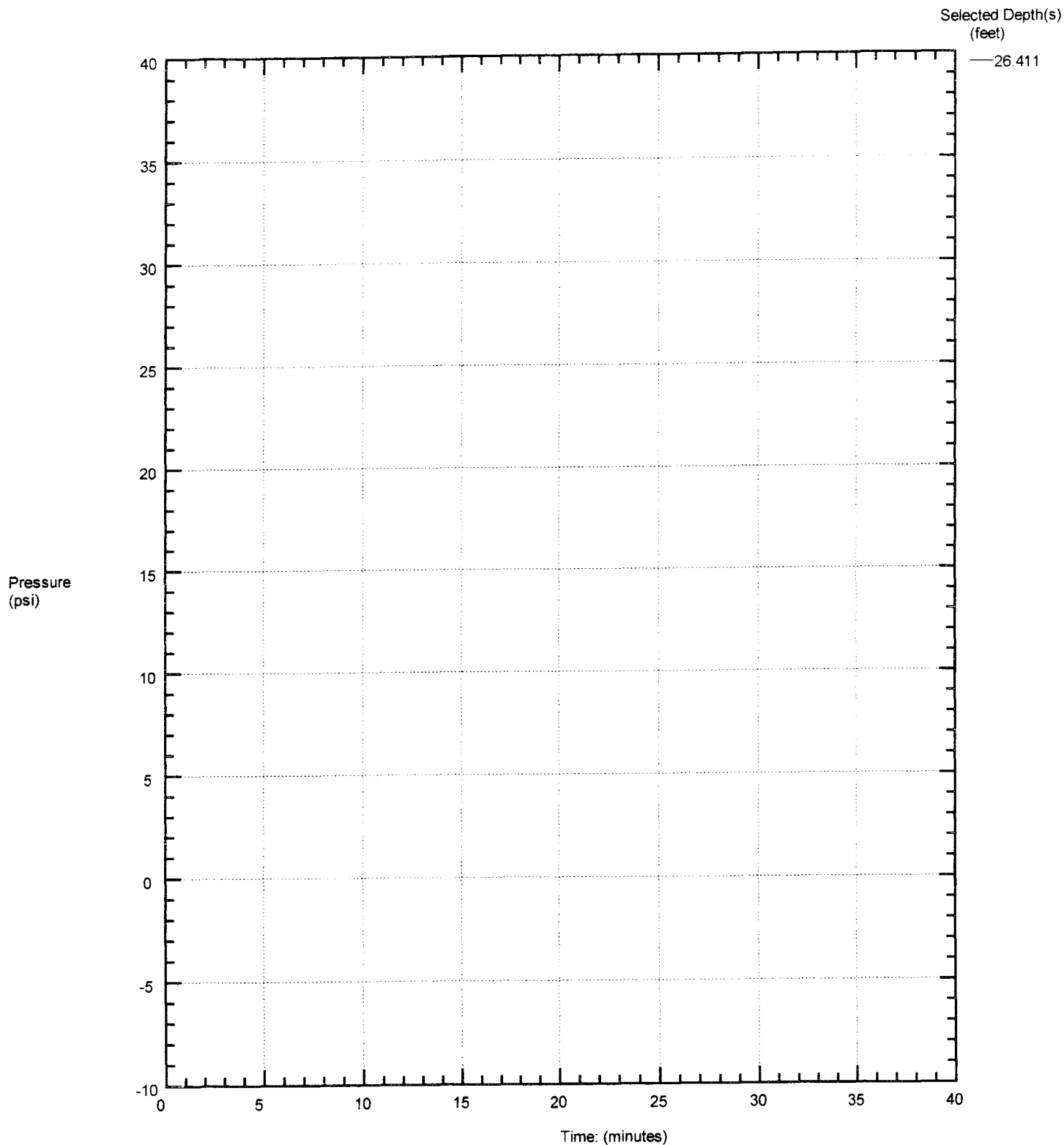


Maximum Pressure = 1.912 psi
Hydrostatic Pressure .

LANDAU / P111-06 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG58
Cone Used: 4CH

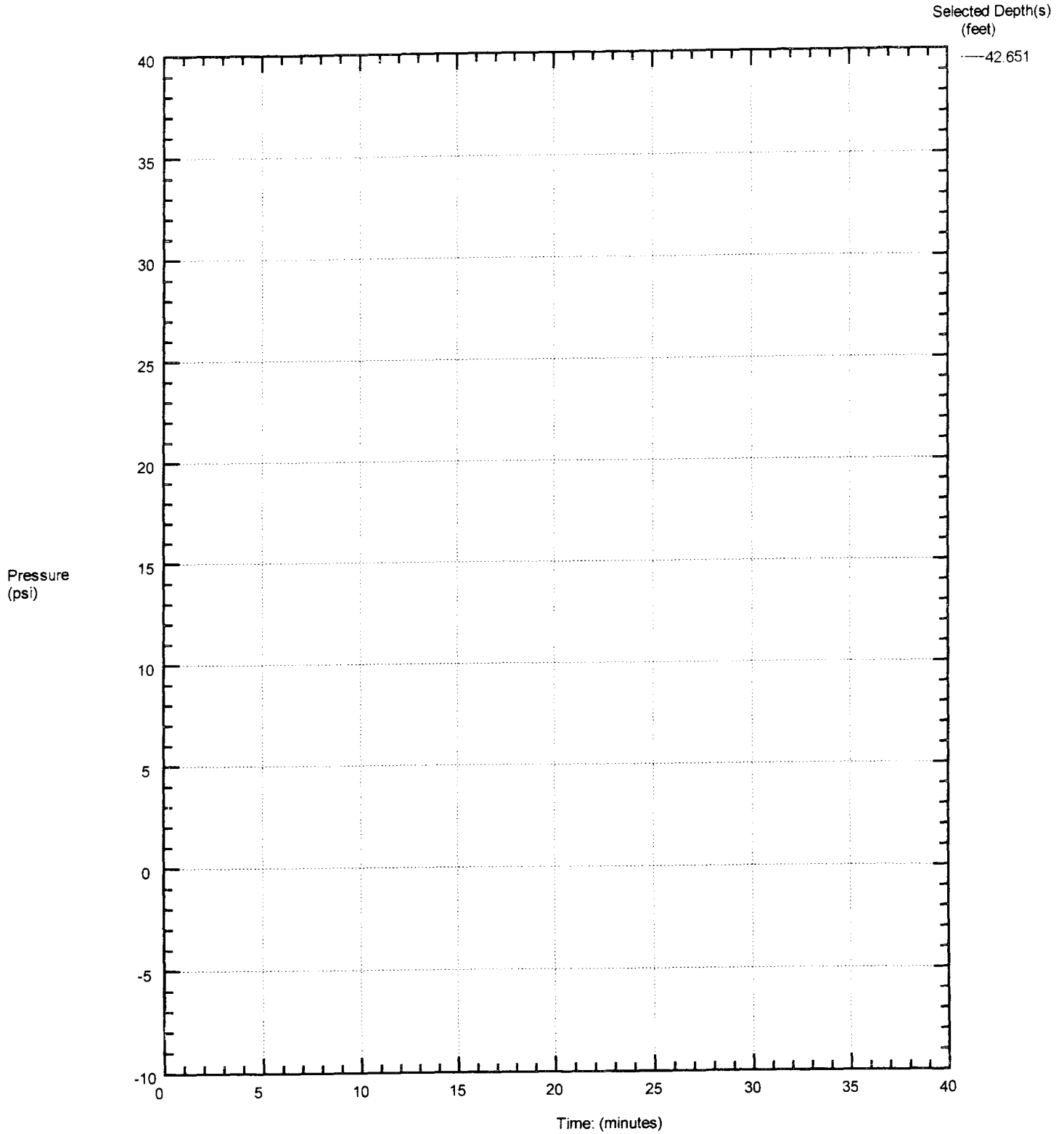
CPT Date/Time: 07-15-02 06:13
Location: P111-06 NW TERMI
Job Number: LANDAU/231009.31



LANDAU / P111-06 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG58
Cone Used: 4CH

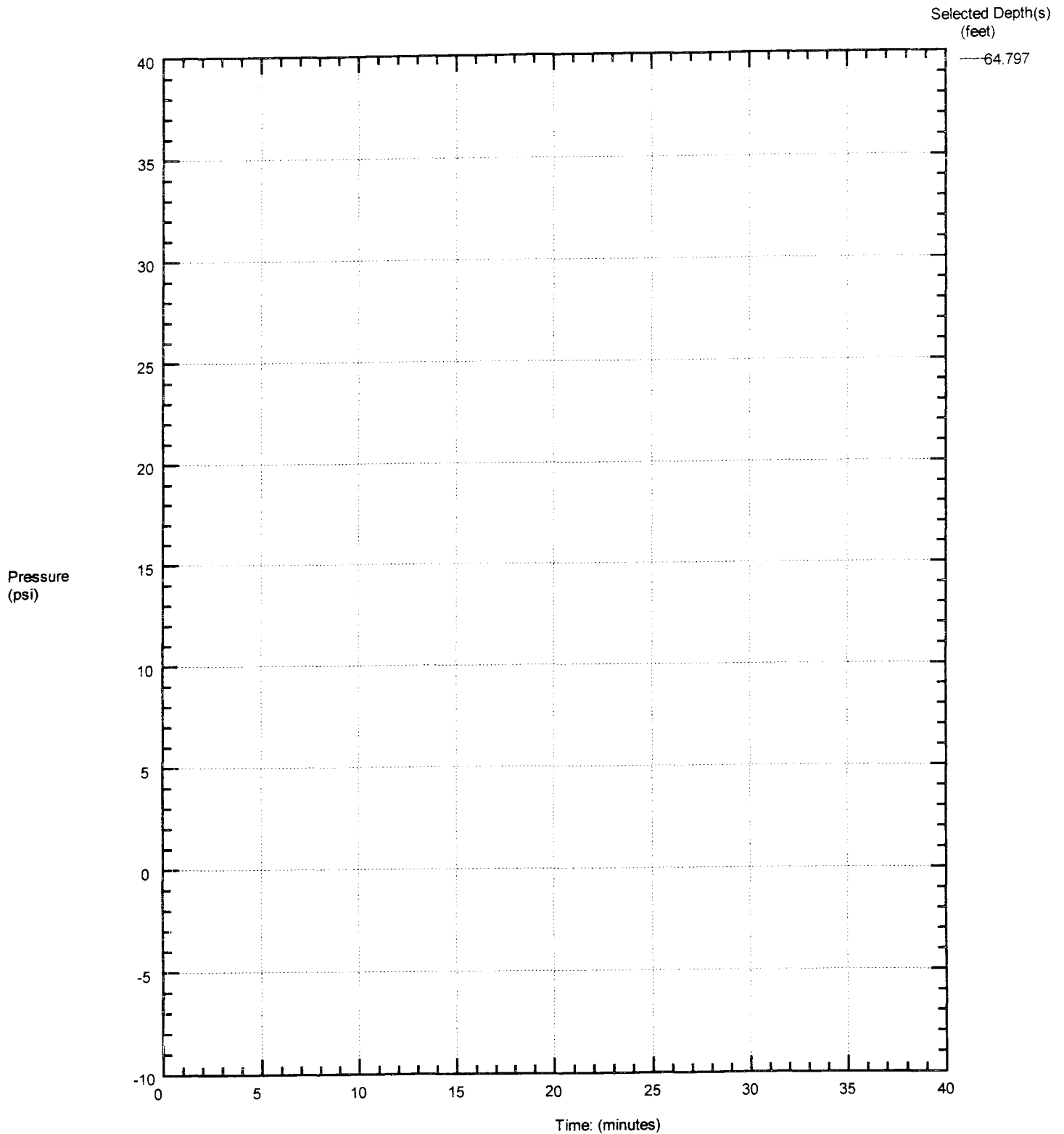
CPT Date/Time: 07-15-02 06:13
Location: P111-06 NW TERMI
Job Number: LANDAU/231009.31



LANDAU / P111-06 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG58
Cone Used: 4CH

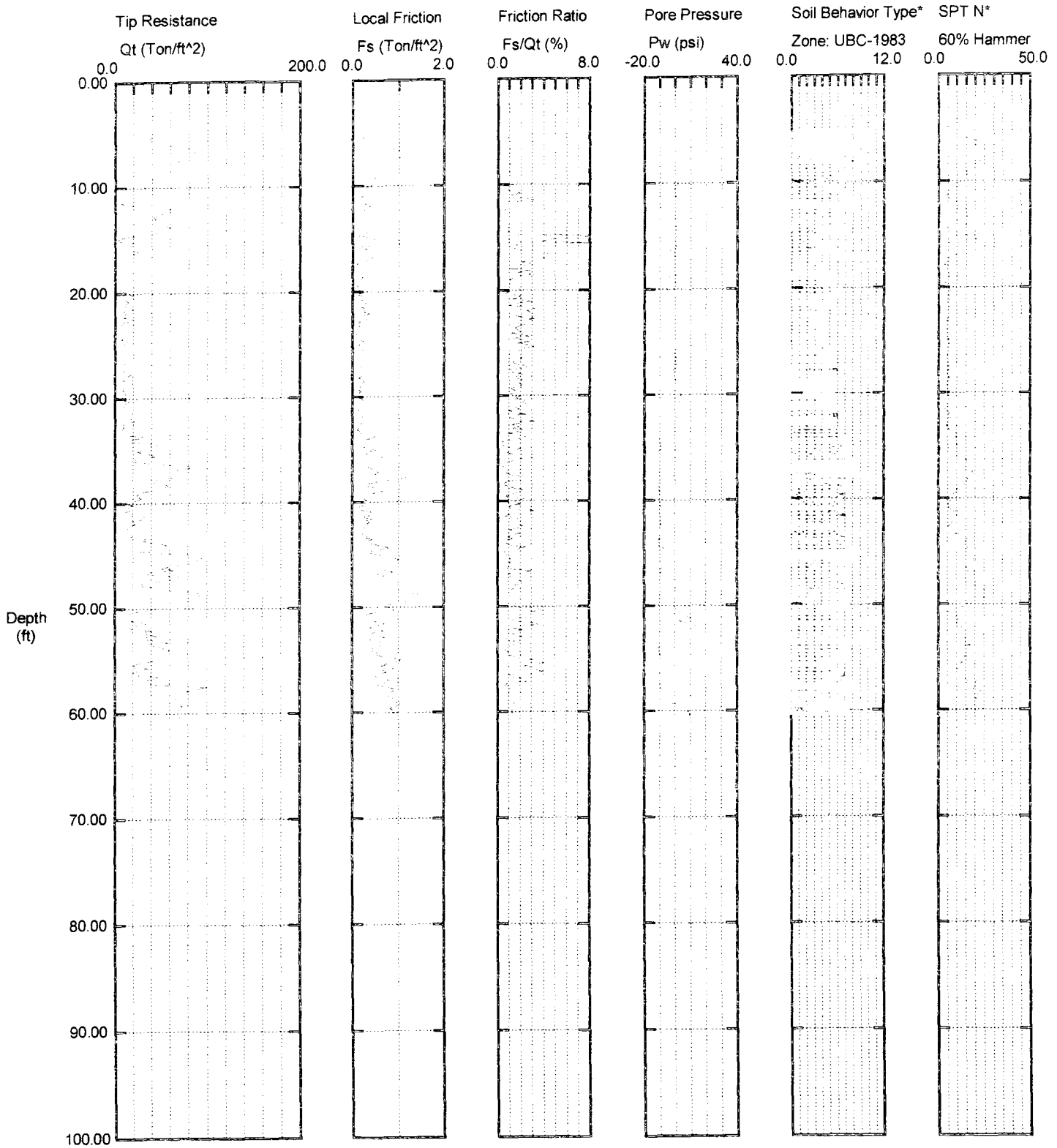
CPT Date/Time: 07-15-02 06:13
Location: P111-06 NW TERMI
Job Number: LANDAU/231009.31



LANDAU / P111-07 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG59
Cone Used: 4CH

CPT Date/Time: 07-15-02 08:11
Location: P111-07 NW TERMI
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

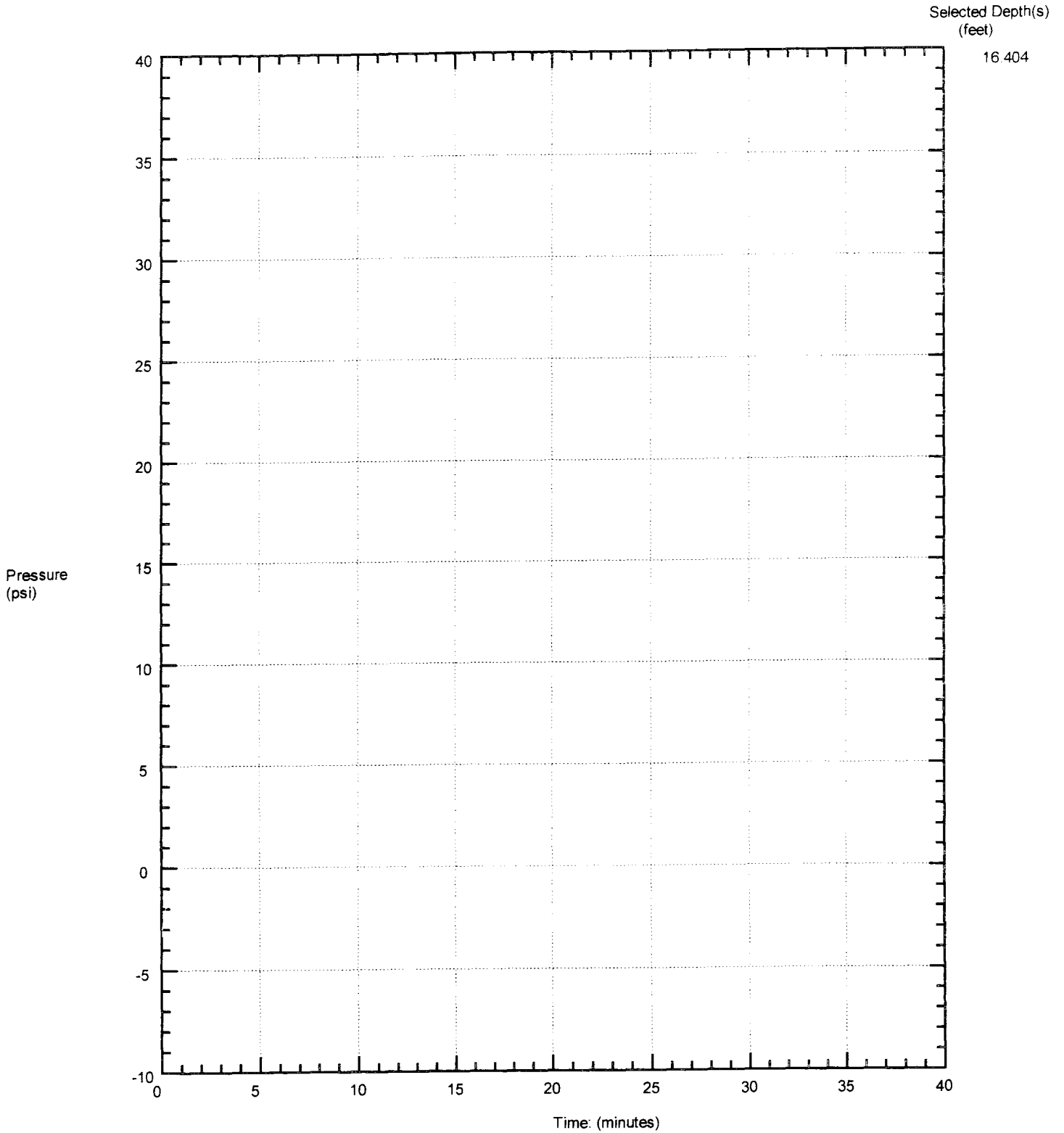
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-07 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG59
Cone Used: 4CH

CPT Date/Time: 07-15-02 08:11
Location: P111-07 NW TERMI
Job Number: LANDAU/231009.31

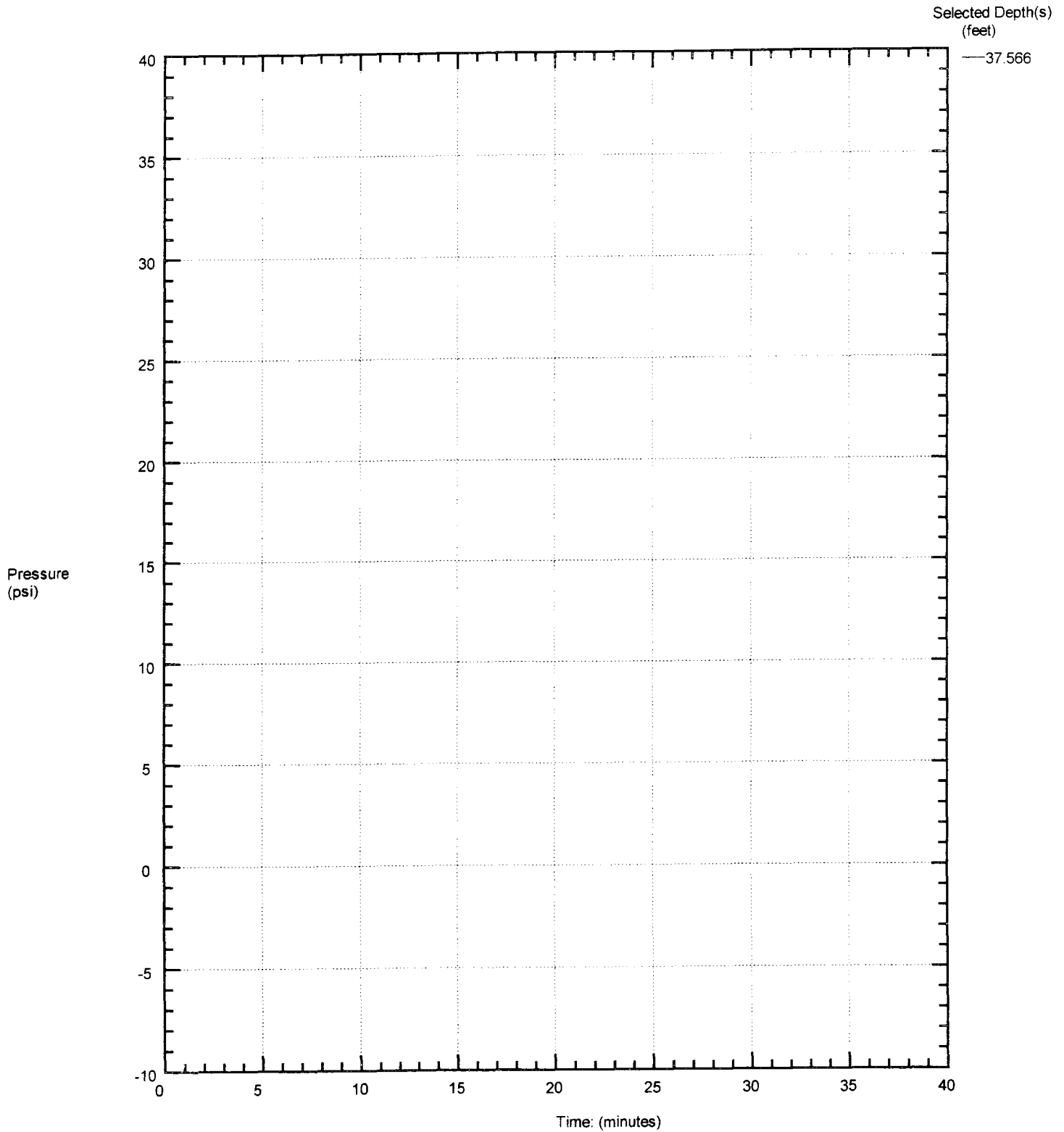


Maximum Pressure = 1.068 psi
Hydrostatic Pressure

LANDAU / P111-07 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG59
Cone Used: 4CH

CPT Date/Time: 07-15-02 08:11
Location: P111-07 NW TERMI
Job Number: LANDAU/231009.31

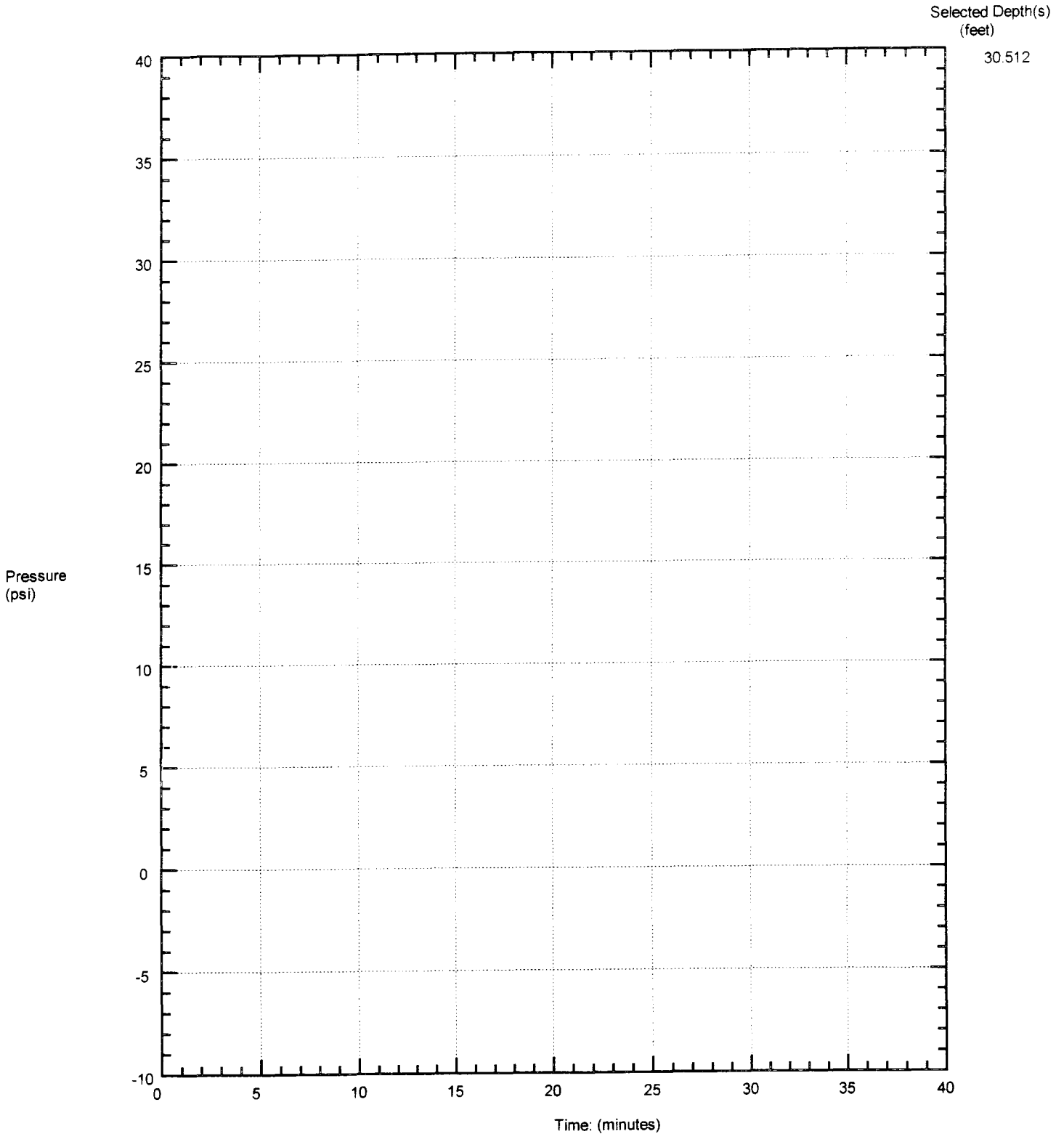


Maximum Pressure = 6.694 psi
Hydrostatic Pressure

LANDAU / P111-07 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG59
Cone Used: 4CH

CPT Date/Time: 07-15-02 08:11
Location: P111-07 NW TERMI
Job Number: LANDAU/231009 31

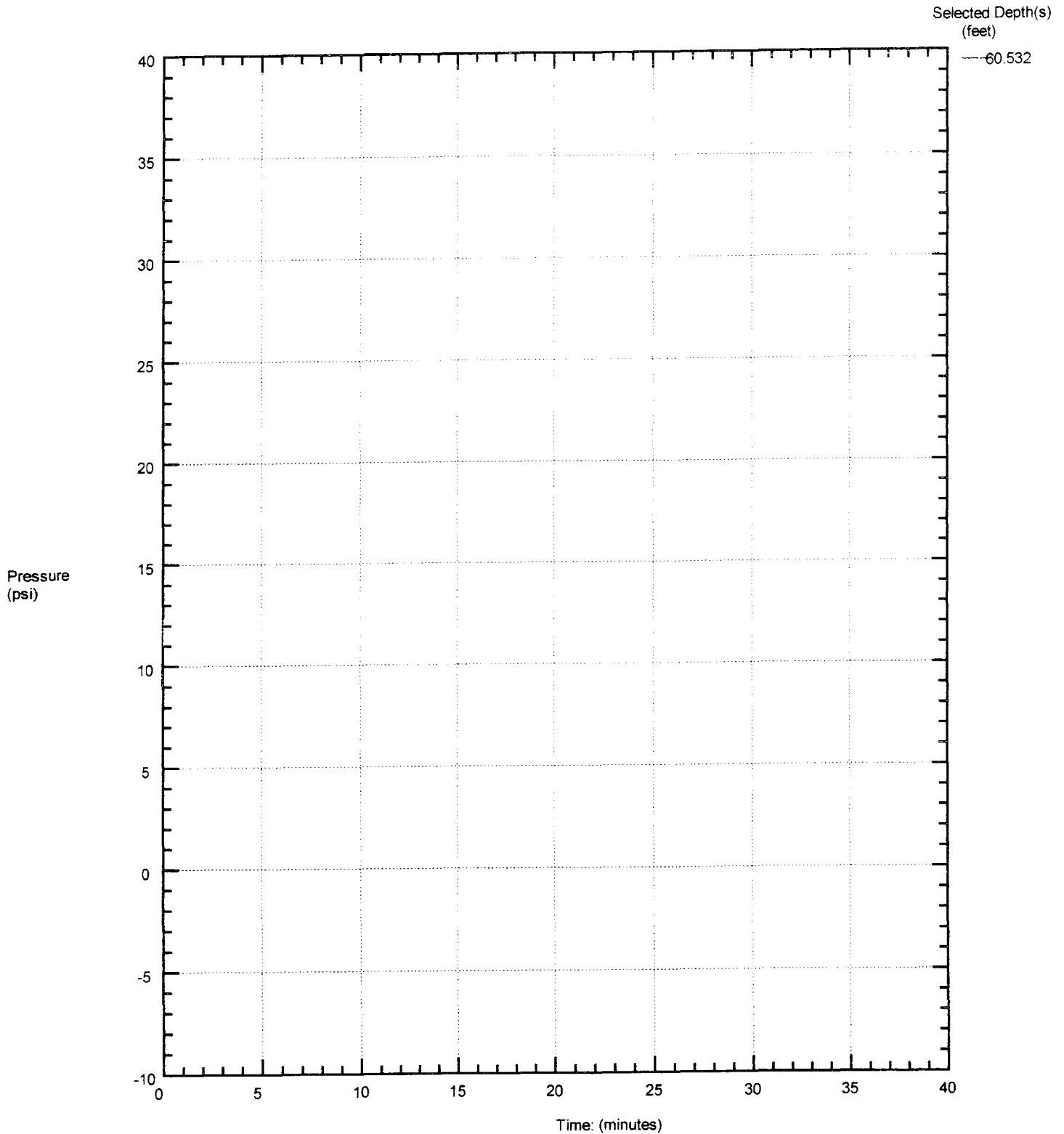


Maximum Pressure = 10.396 psi
Hydrostatic Pressure

LANDAU / P111-07 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG59
Cone Used: 4CH

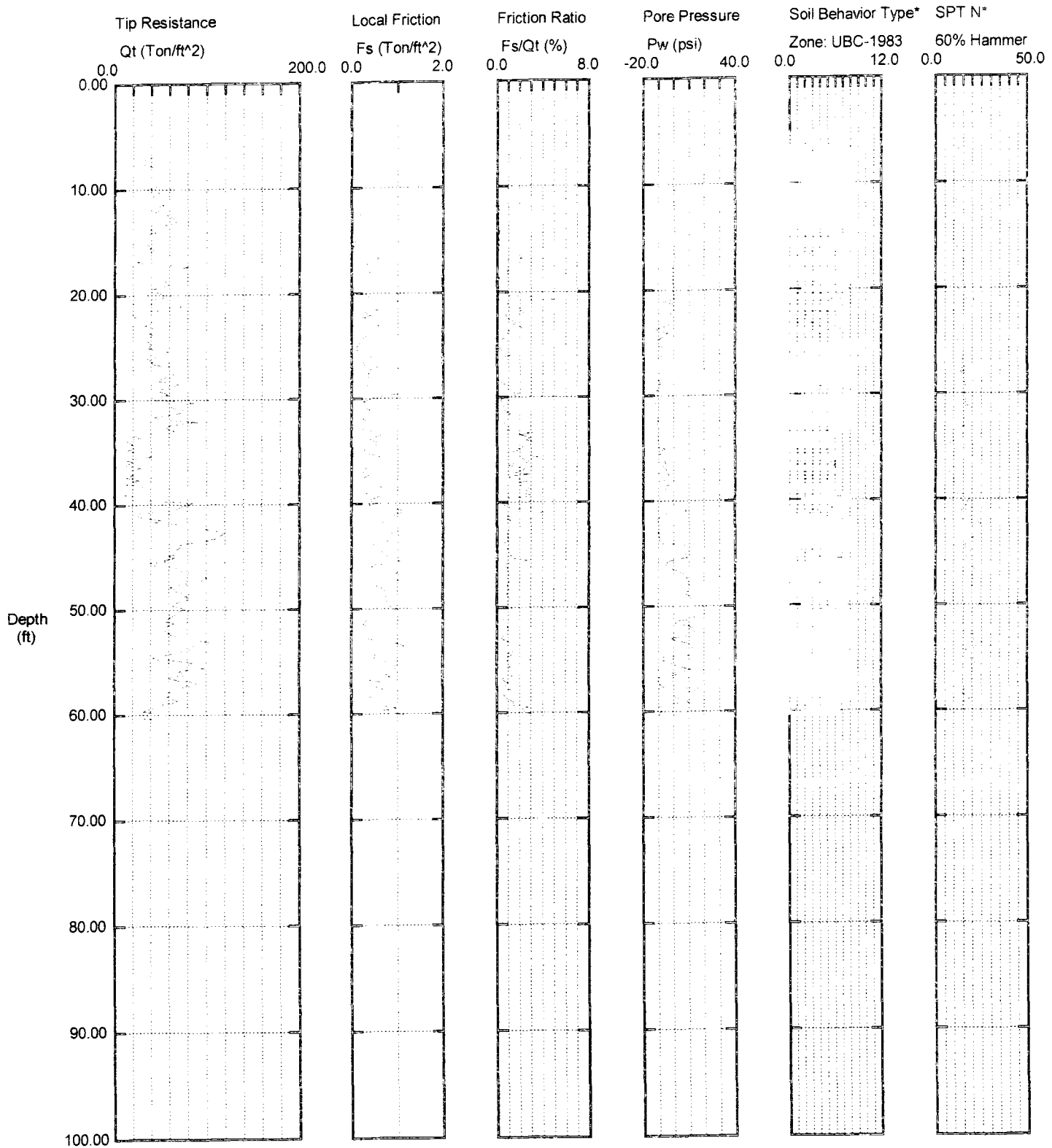
CPT Date/Time: 07-15-02 08:11
Location: P111-07 NW TERMI
Job Number: LANDAU/231009.31



LANDAU / P111-08 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG60
Cone Used: 4CH

CPT Date/Time: 07-15-02 10:05
Location: P111-08 NW TERMINI
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

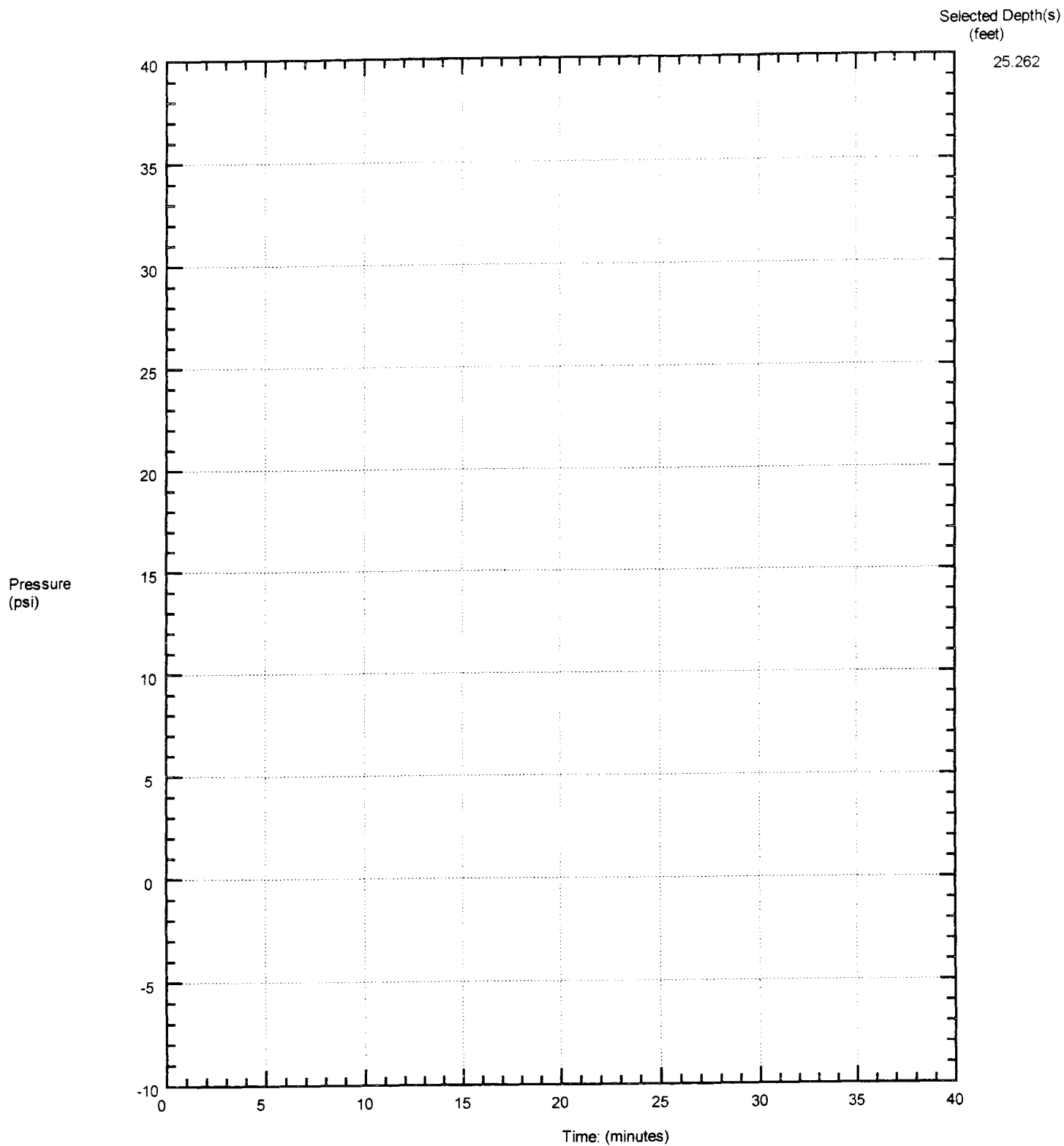
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-08 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG60
Cone Used: 4CH

CPT Date/Time: 07-15-02 10:05
Location: P111-08 NW TERMI
Job Number: LANDAU/231009.31

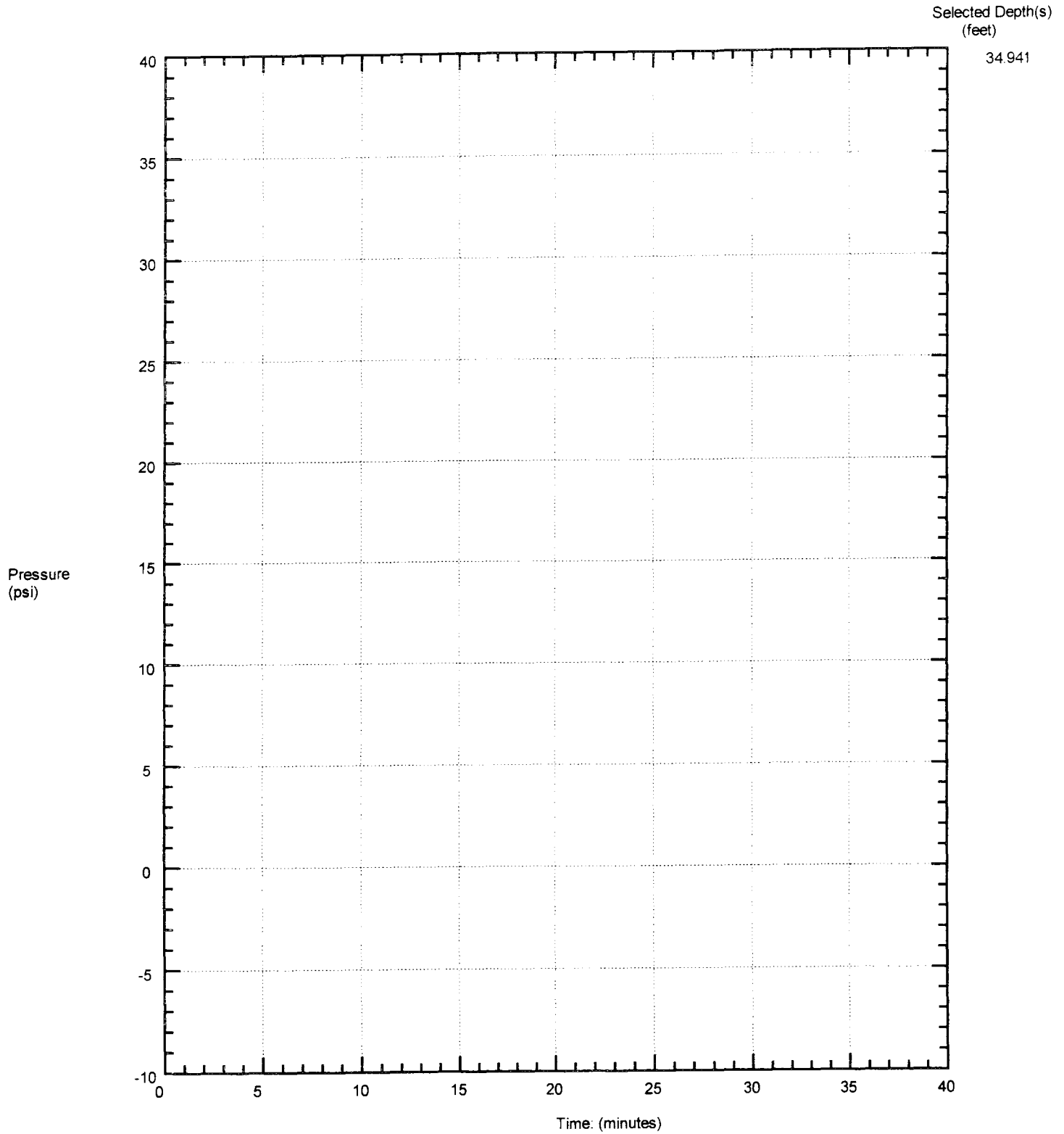


Maximum Pressure = 0.671 psi
Hydrostatic Pressure

LANDAU / P111-08 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG60
Cone Used: 4CH

CPT Date/Time: 07-15-02 10:05
Location: P111-08 NW TERMI
Job Number: LANDAU/231009.31

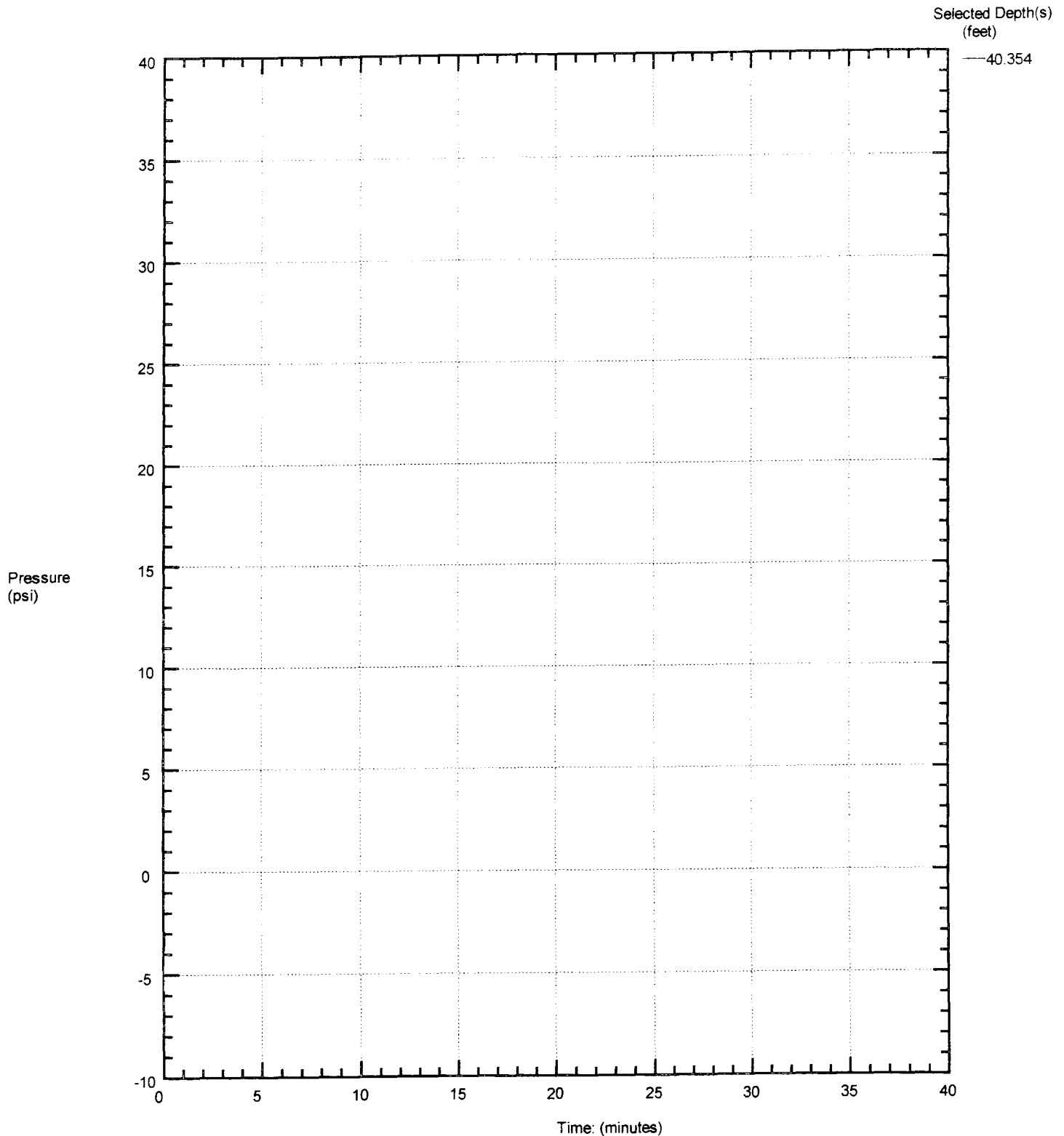


Maximum Pressure = 4.547 psi
Hydrostatic Pressure

LANDAU / P111-08 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG60
Cone Used: 4CH

CPT Date/Time: 07-15-02 10:05
Location: P111-08 NW TERMI
Job Number: LANDAU/231009.31

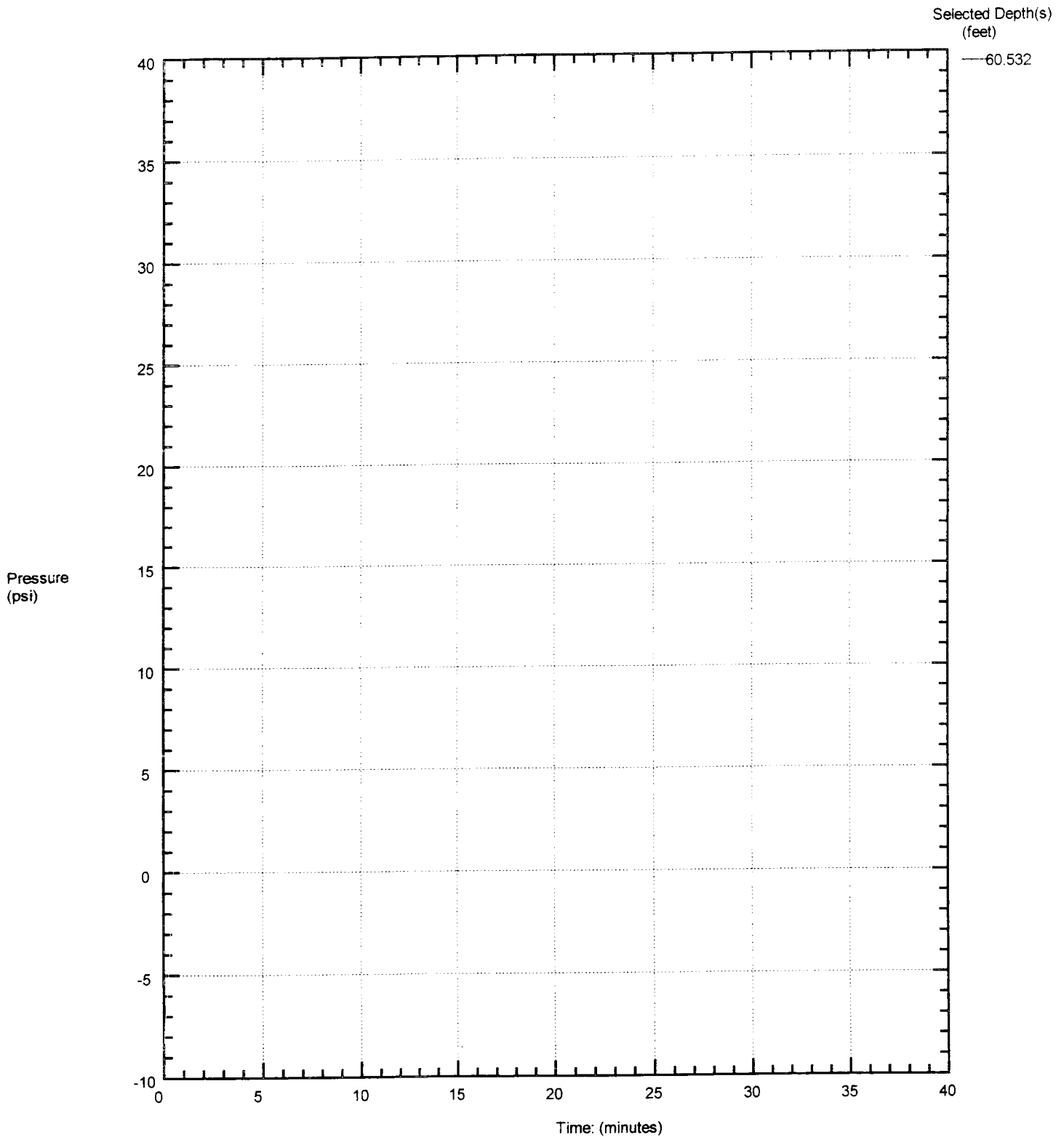


Maximum Pressure = 7.375 psi
Hydrostatic Pressure

LANDAU / P111-08 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG60
Cone Used: 4CH

CPT Date/Time: 07-15-02 10:05
Location: P111-08 NW TERMINI
Job Number: LANDAU/231009.31

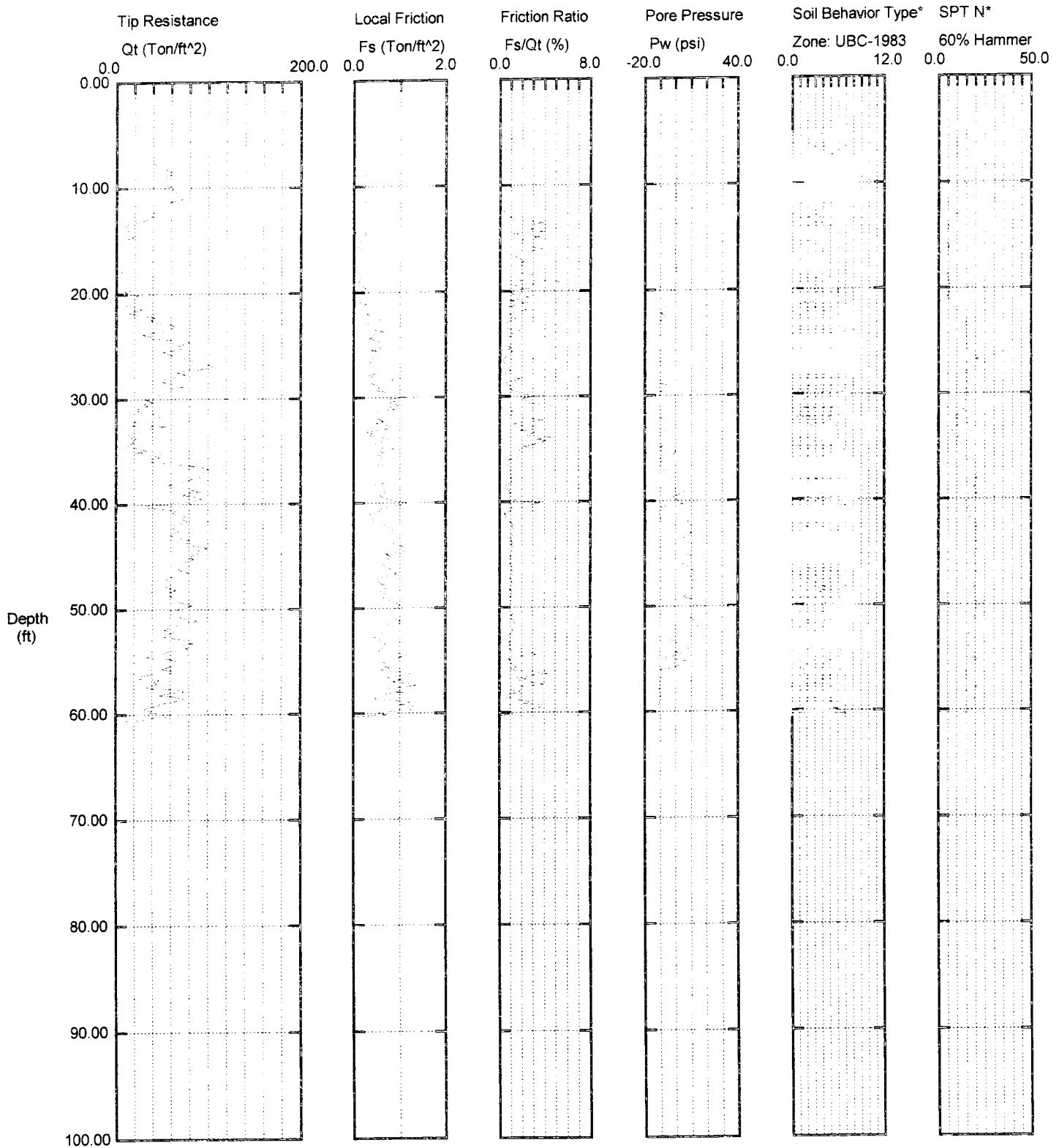


Maximum Pressure = 16.744 psi
Hydrostatic Pressure

LANDAU / P111-09 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG51
Cone Used: 4CH

CPT Date/Time: 07-11-02 12:58
Location: P111-09 NW TERM
Job Number: LANDAU/231009.31



Maximum Depth = 60.70 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

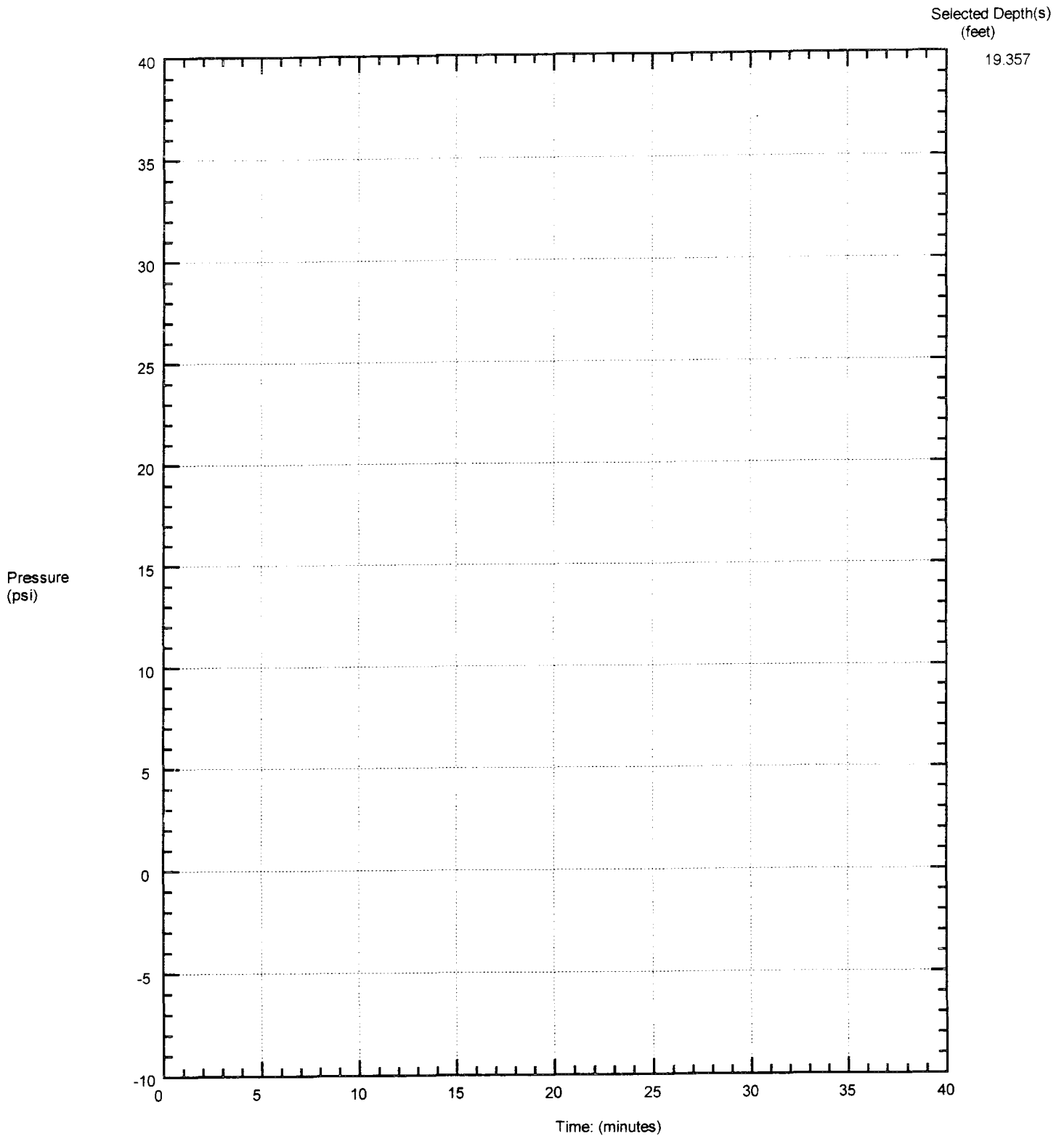
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-09 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG51
Cone Used: 4CH

CPT Date/Time: 07-11-02 12:58
Location: P111-09 NW TERM
Job Number: LANDAU/231009.31

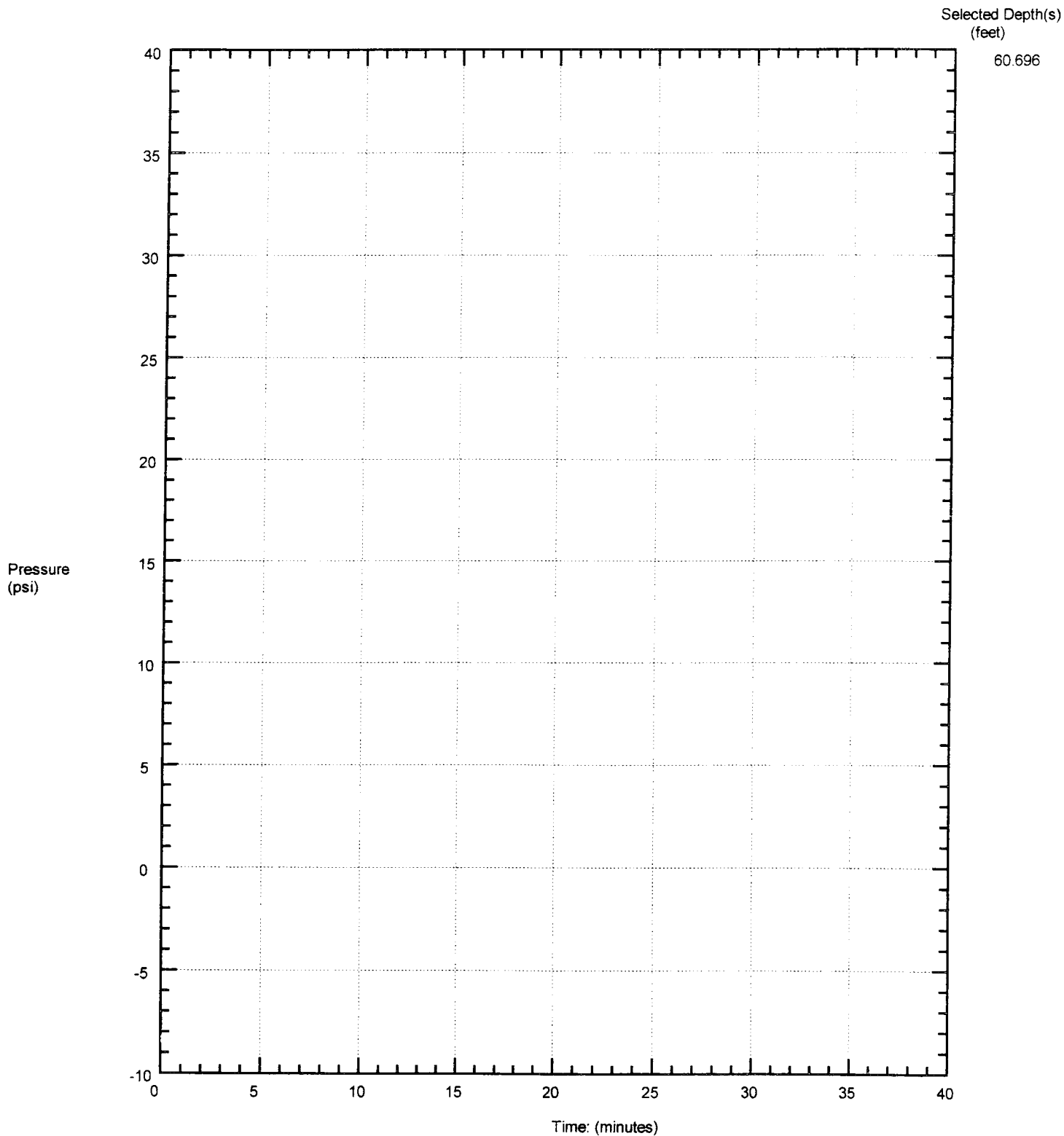


Maximum Pressure = 9.196 psi
Hydrostatic Pressure

LANDAU / P111-09 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG51
Cone Used: 4CH

CPT Date/Time: 07-11-02 12:58
Location: P111-09 NW TERM
Job Number: LANDAU/231009.31



Maximum Pressure = 17.517 psi
Hydrostatic Pressure

LANDAU / P111-10 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH

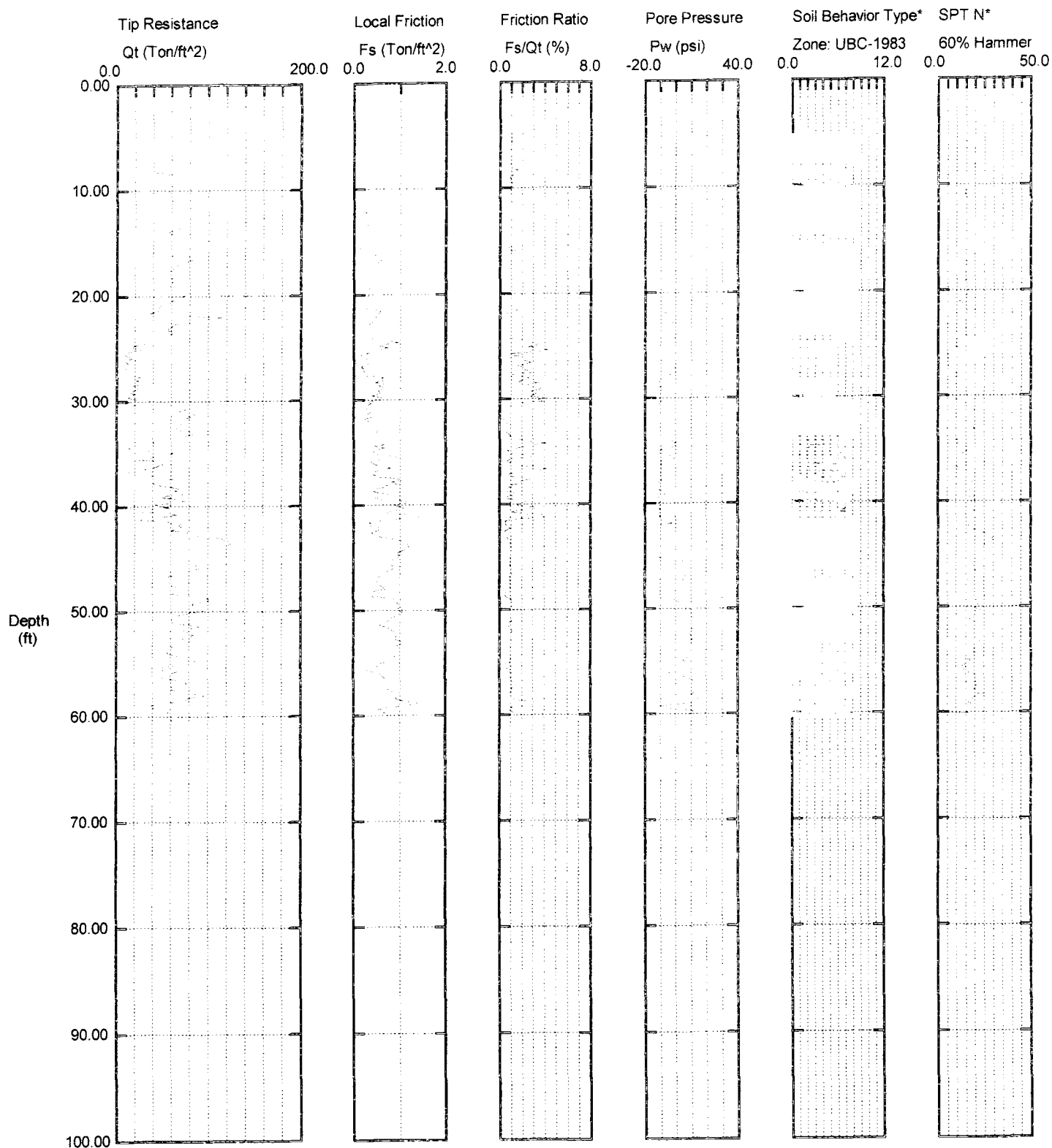
Sounding: FILG48

Cone Used: 4CH

CPT Date/Time: 07-11-02 08:17

Location: P111-10 NW TERM

Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

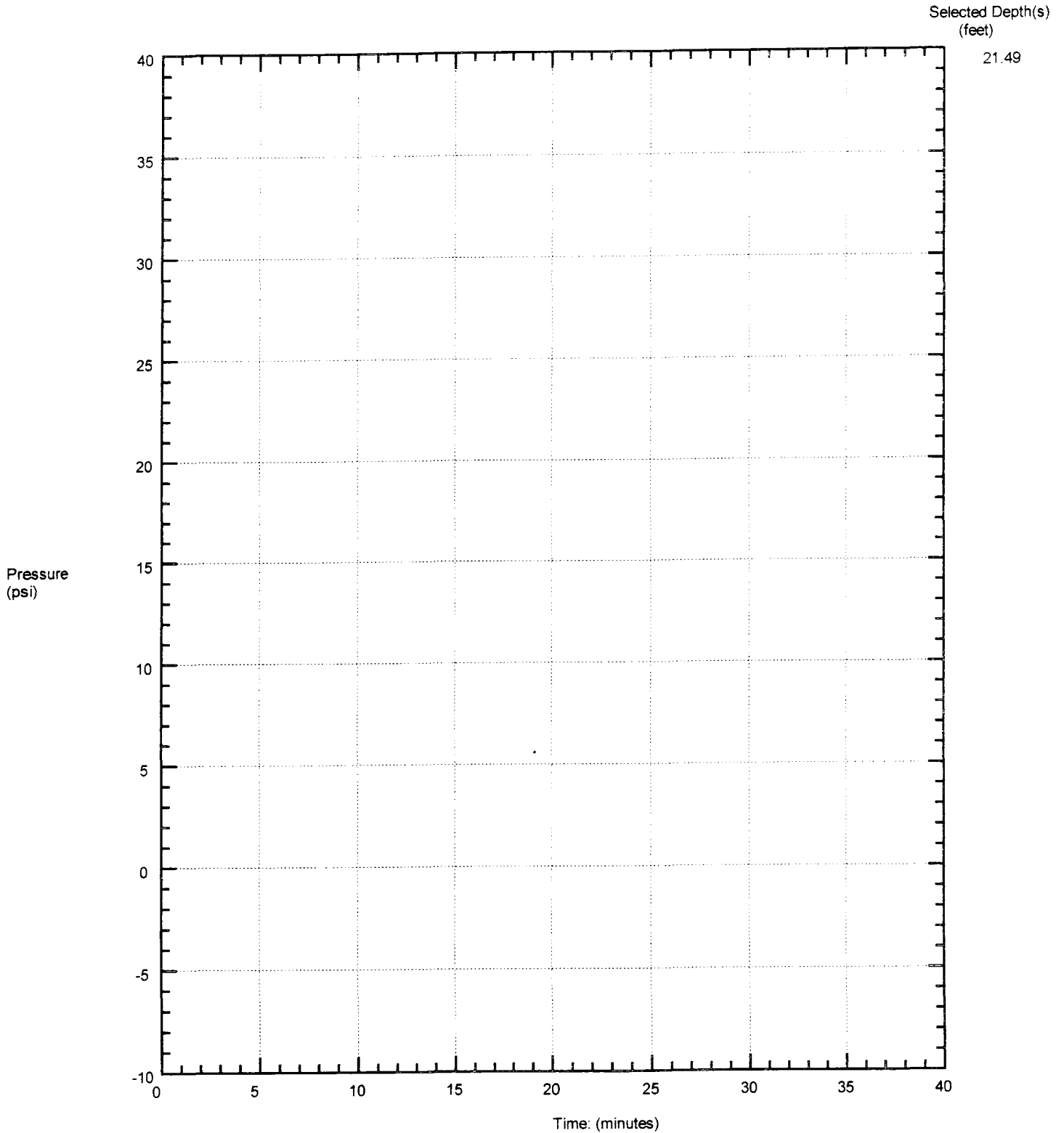
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-10 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG48
Cone Used: 4CH

CPT Date/Time: 07-11-02 08:17
Location: P111-10 NW TERM
Job Number: LANDAU/231009.31



Maximum Pressure = -0.427 psi
Hydrostatic Pressure

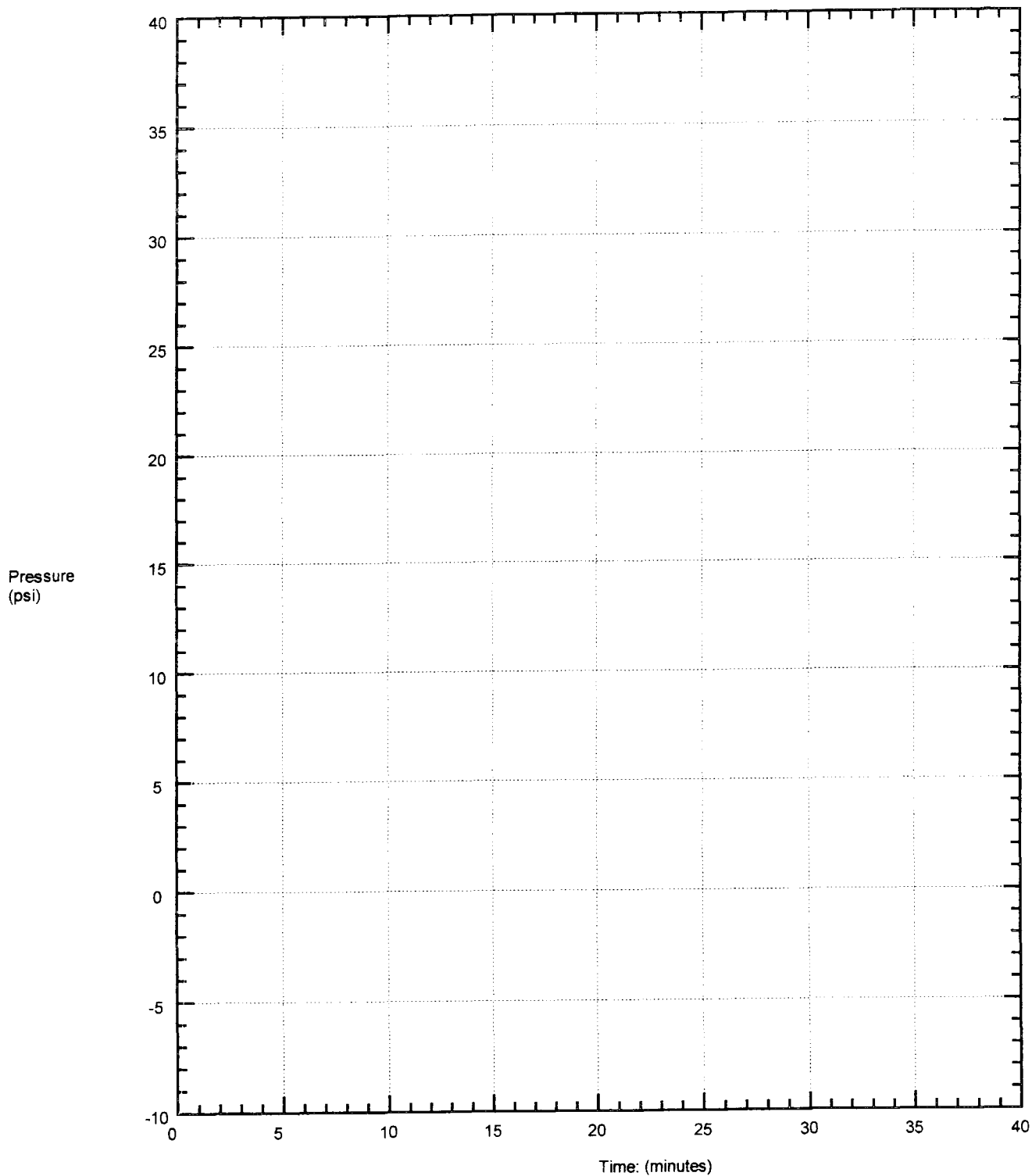
LANDAU / P111-10 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG48
Cone Used: 4CH

CPT Date/Time: 07-11-02 08:17
Location: P111-10 NW TERM
Job Number: LANDAU/231009.31

Selected Depth(s)
(feet)

38.714

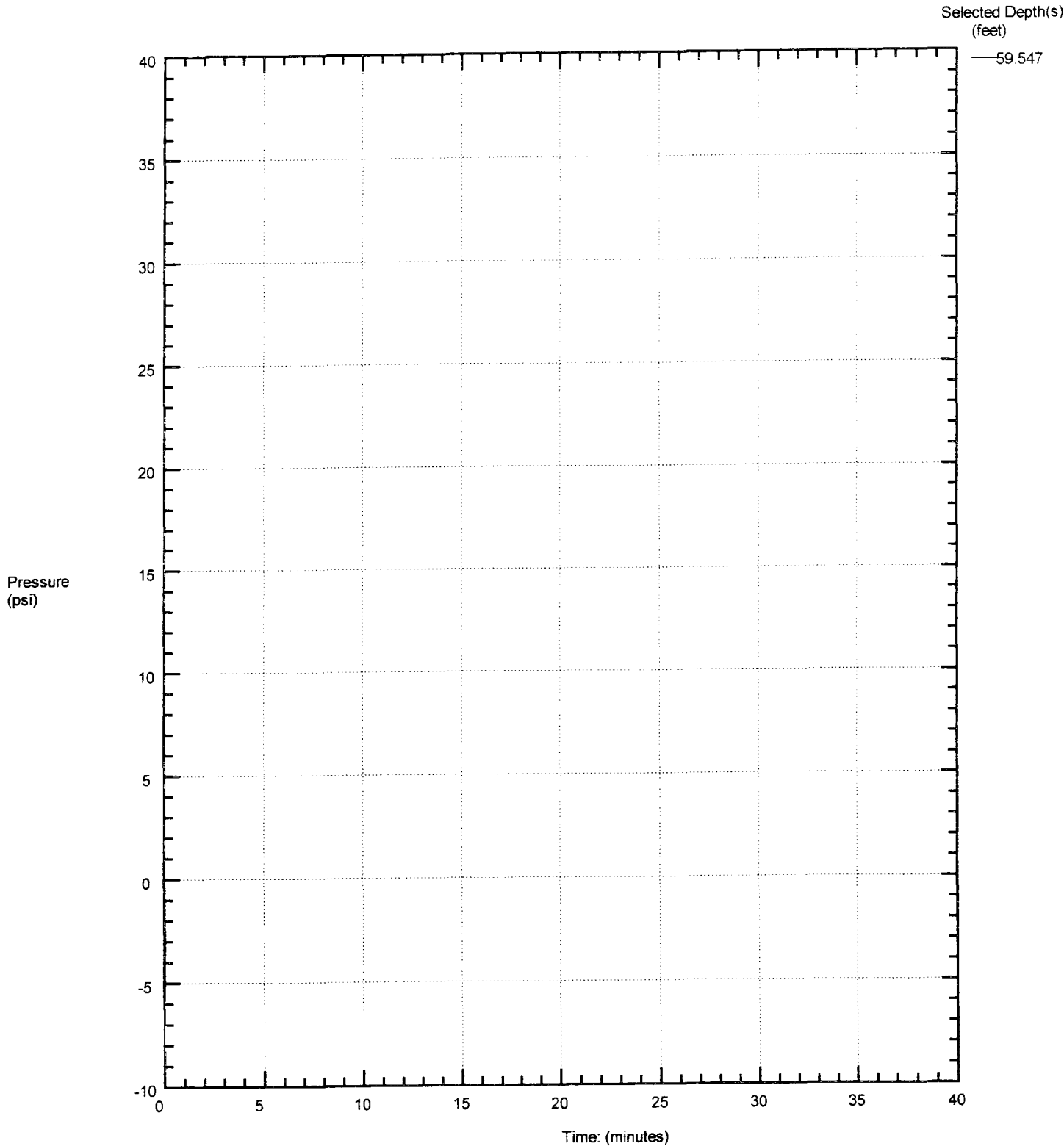


Maximum Pressure = 5.625 psi
Hydrostatic Pressure

LANDAU / P111-10 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG48
Cone Used: 4CH

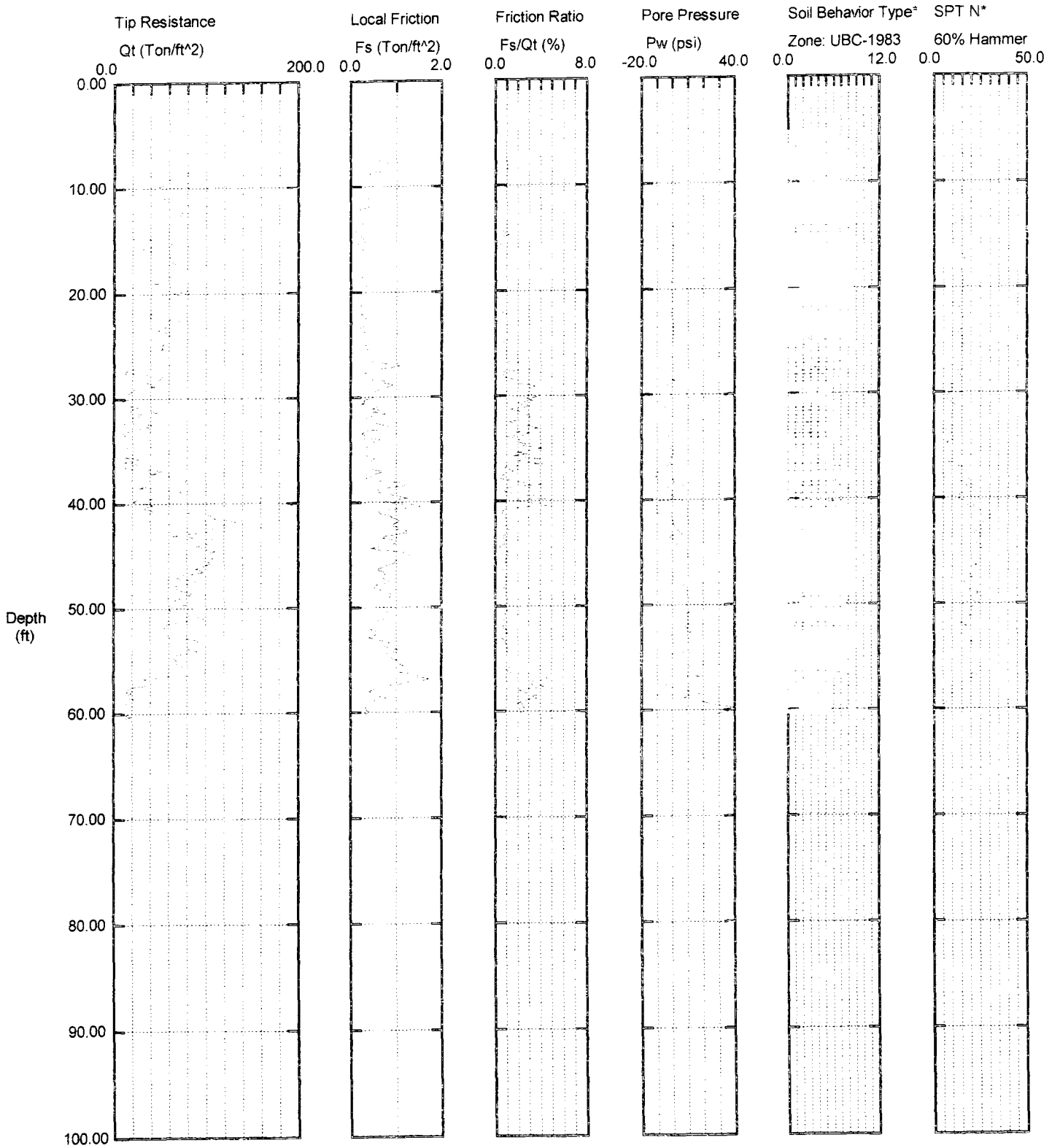
CPT Date/Time: 07-11-02 08:17
Location: P111-10 NW TERM
Job Number: LANDAU/231009.31



LANDAU / P111-11 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG47
Cone Used: 4CH

CPT Date/Time: 07-11-02 06:20
Location: P111-11 NW TERM
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

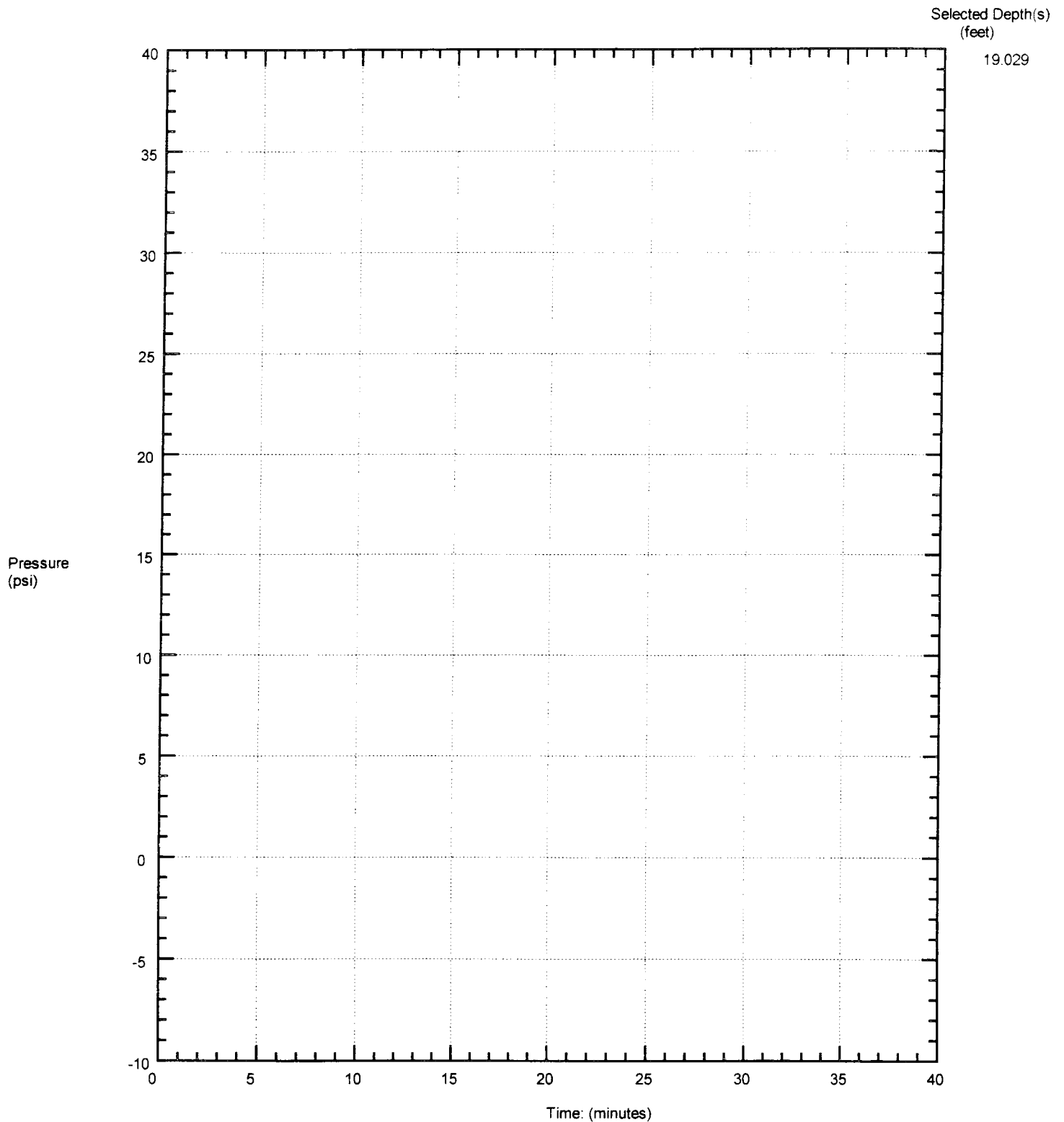
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-11 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG47
Cone Used: 4CH

CPT Date/Time: 07-11-02 06:20
Location: P111-11 NW TERM
Job Number: LANDAU/231009.31



Maximum Pressure = 0.722 psi
Hydrostatic Pressure

LANDAU / P111-11 / NW TERMINAL

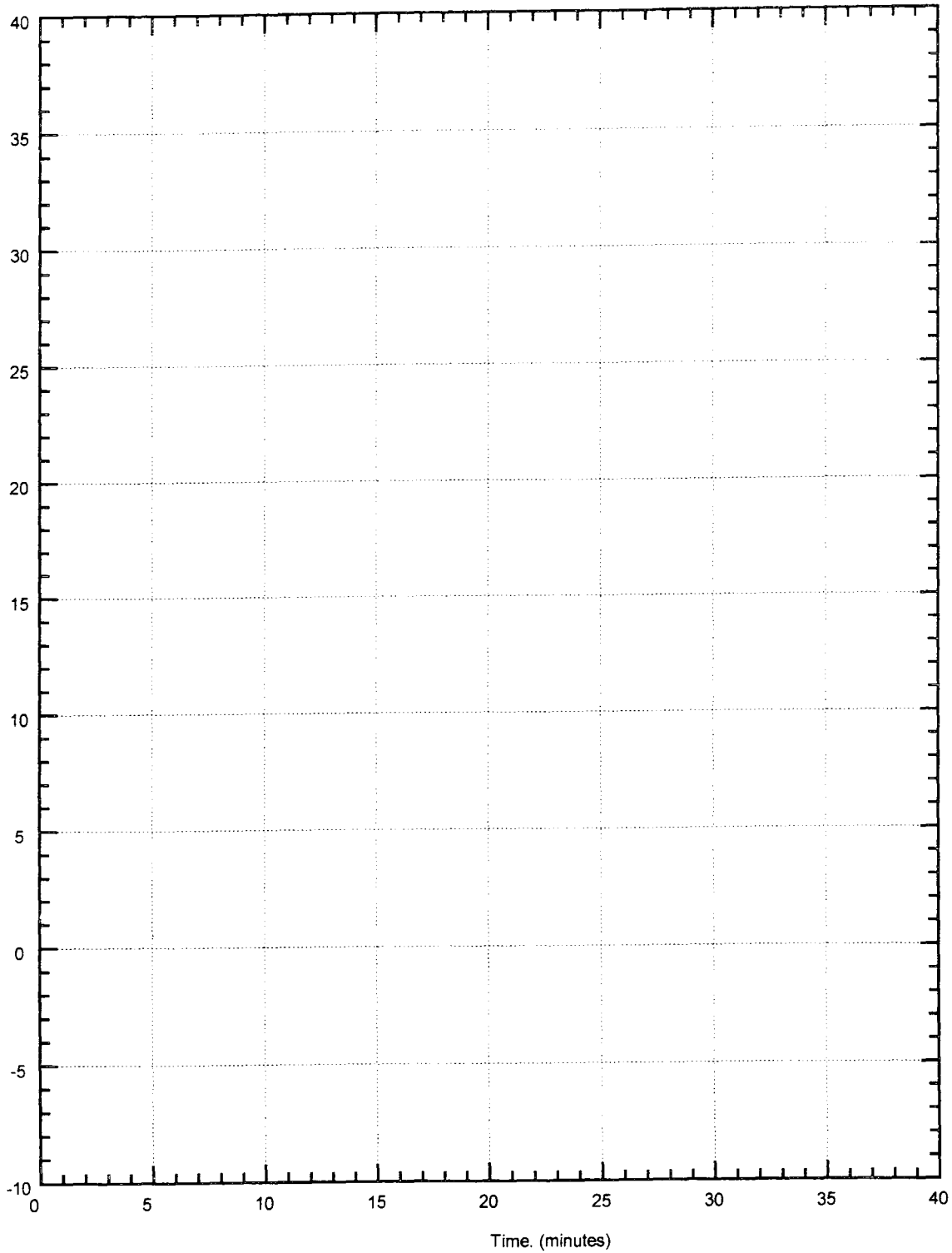
Operator KDV/SVAN/GEOTECH
Sounding: FILG47
Cone Used: 4CH

CPT Date/Time: 07-11-02 06:20
Location: P111-11 NW TERM
Job Number: LANDAU/231009.31

Selected Depth(s)
(feet)

22.31

Pressure
(psi)

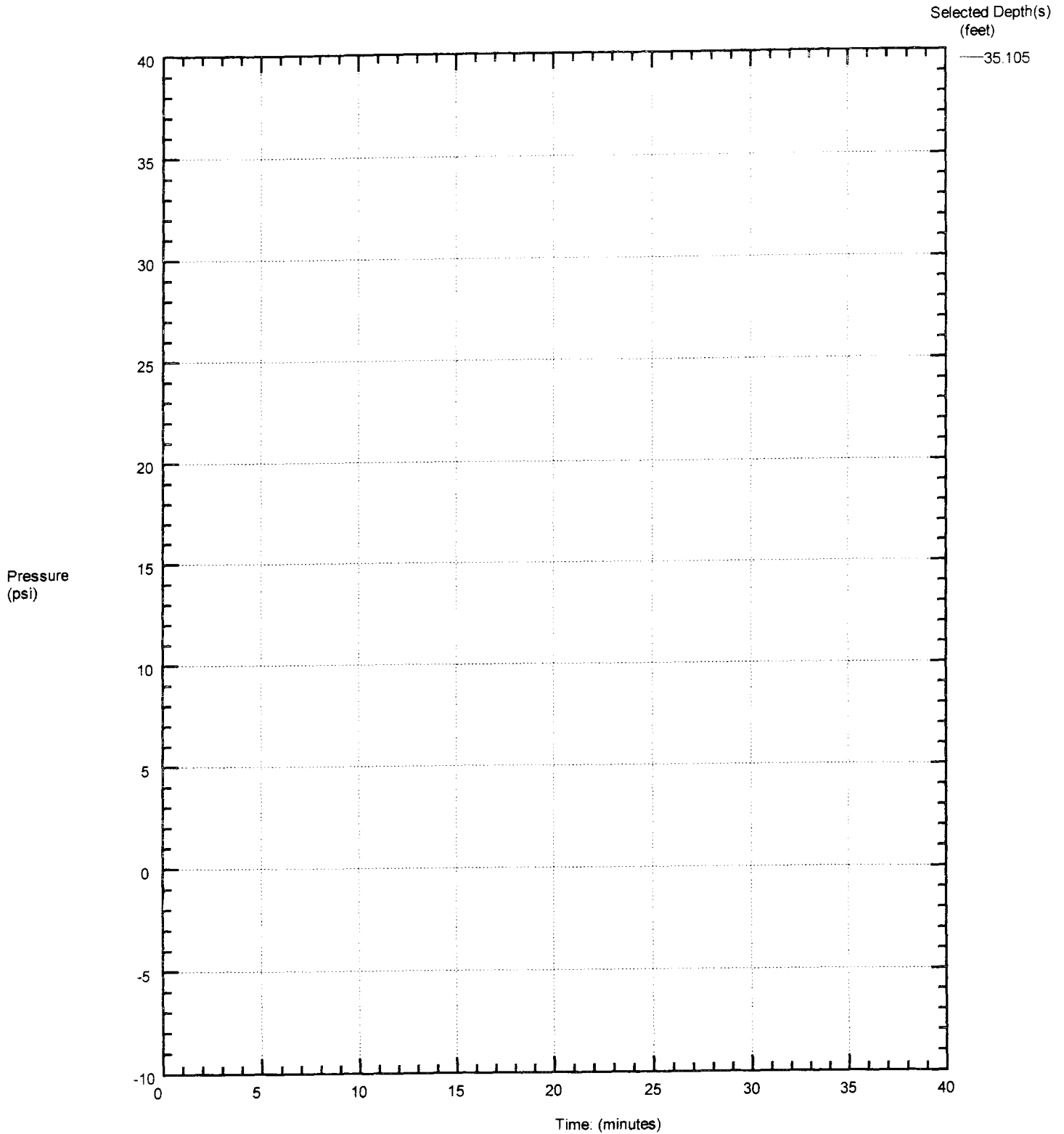


Maximum Pressure = 1.506 psi
Hydrostatic Pressure

LANDAU / P111-11 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG47
Cone Used: 4CH

CPT Date/Time: 07-11-02 06:20
Location: P111-11 NW TERM
Job Number: LANDAU/231009.31

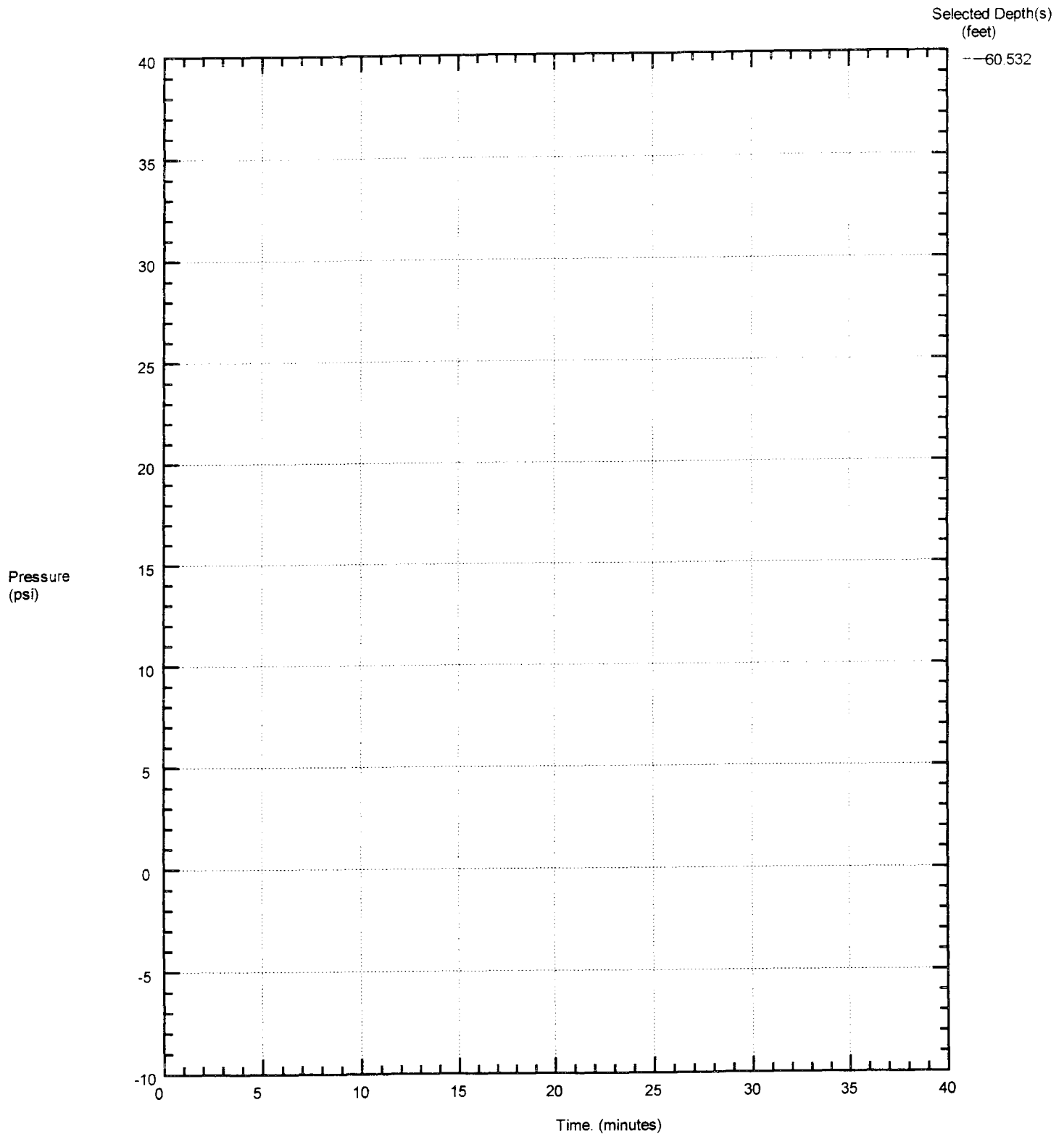


Maximum Pressure = 5.717 psi
Hydrostatic Pressure

LANDAU / P111-11 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG47
Cone Used: 4CH

CPT Date/Time: 07-11-02 06:20
Location: P111-11 NW TERM
Job Number: LANDAU/231009.31

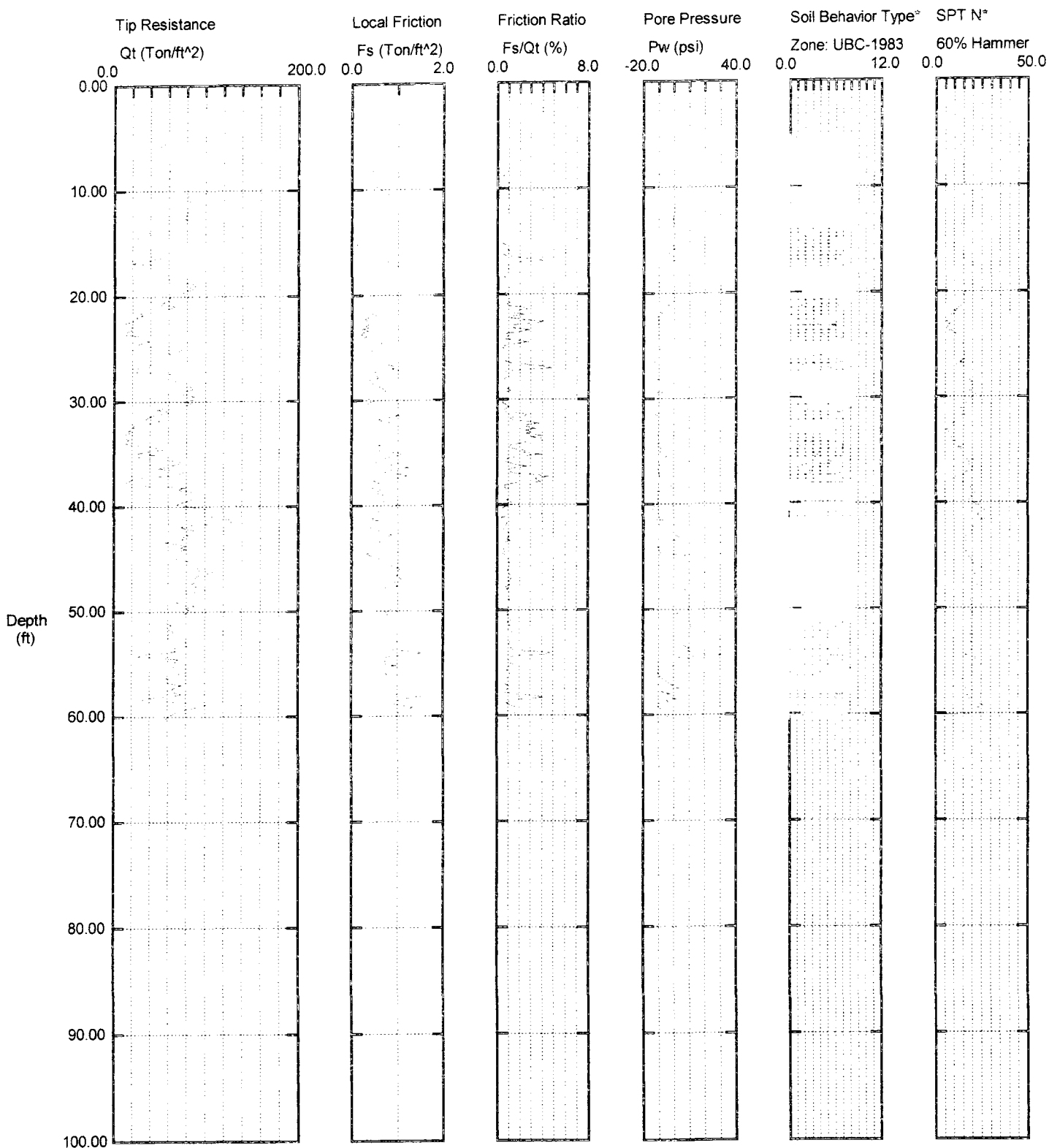


Maximum Pressure = 62.897 psi
Hydrostatic Pressure

LANDAU / P111-12 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG49
Cone Used: 4CH

CPT Date/Time: 07-11-02 10:23
Location: P111-12 NW TERM
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

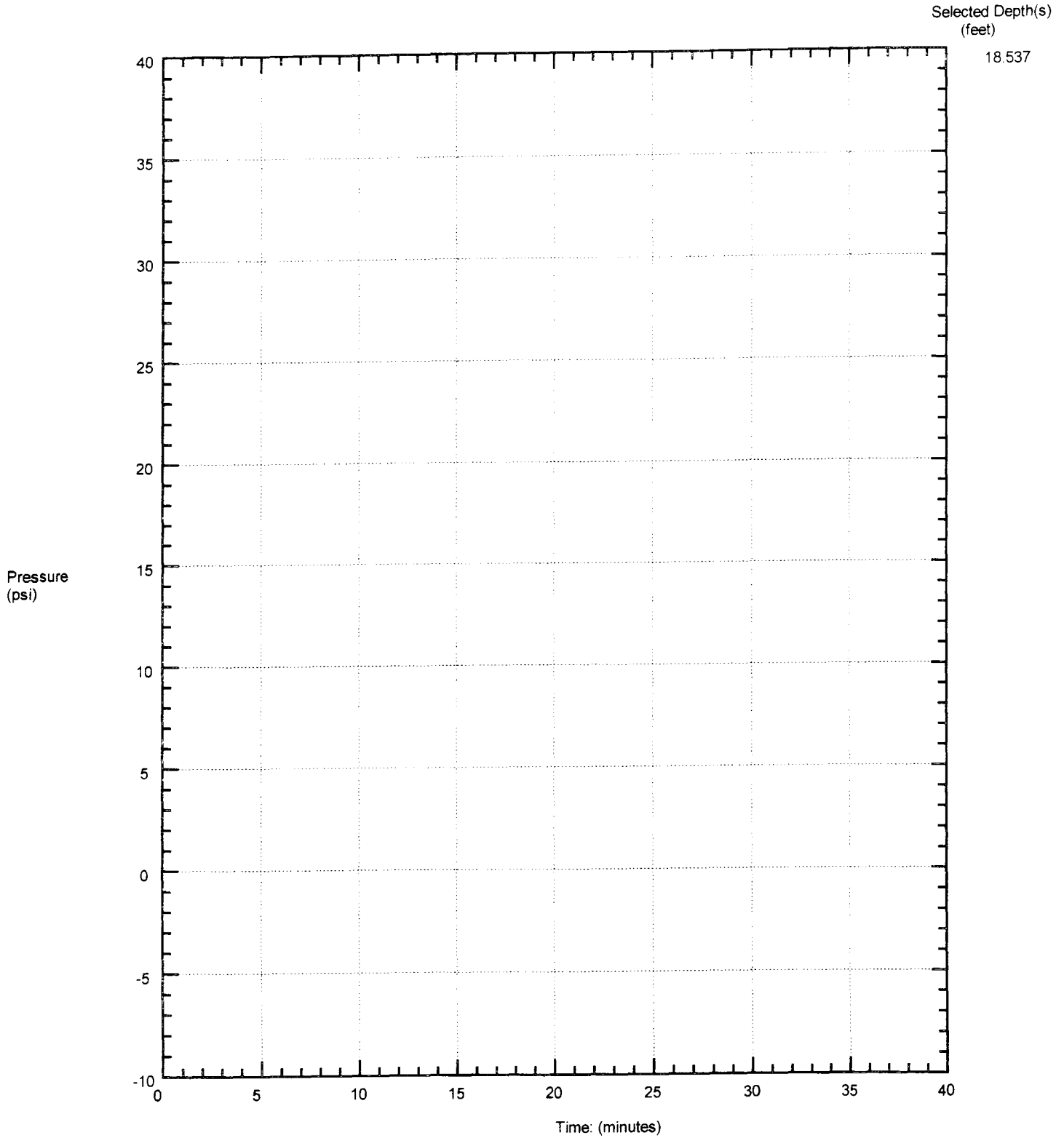
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-12 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG49
Cone Used: 4CH

CPT Date/Time: 07-11-02 10:23
Location: P111-12 NW TERM
Job Number: LANDAU/231009.31

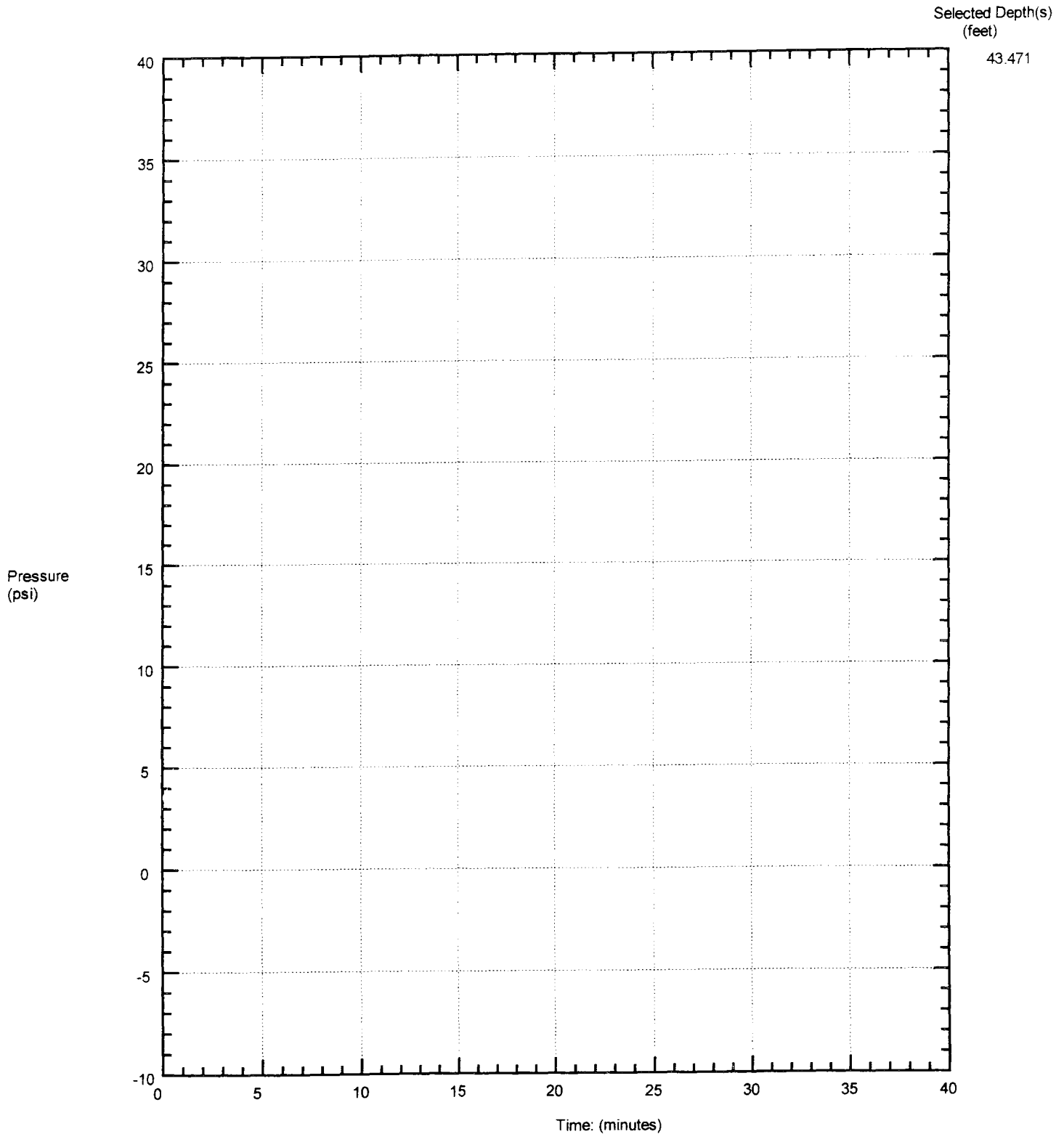


Maximum Pressure = -0.732 psi
Hydrostatic Pressure

LANDAU / P111-12 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG49
Cone Used: 4CH

CPT Date/Time: 07-11-02 10:23
Location: P111-12 NW TERM
Job Number: LANDAU/231009.31

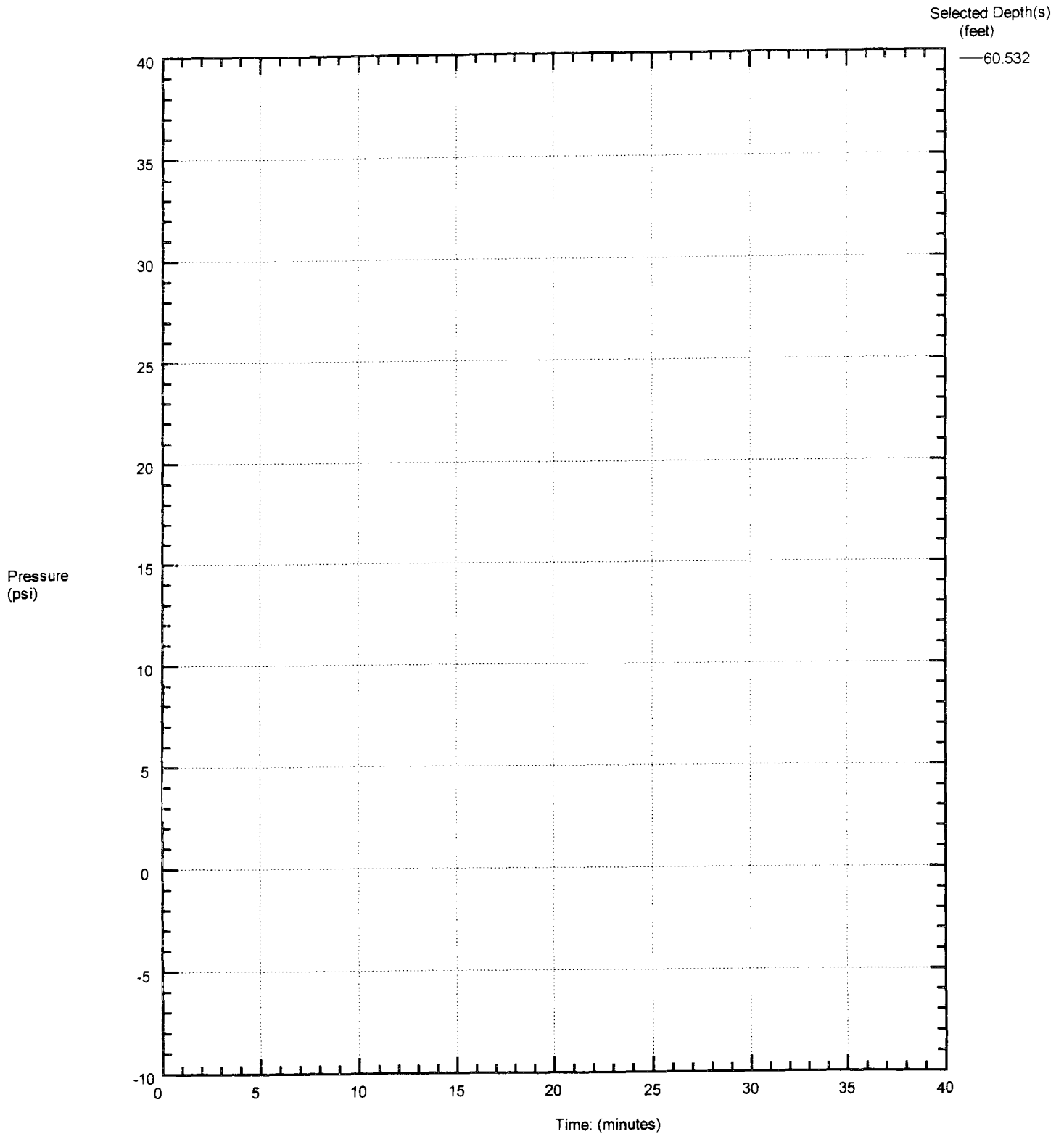


Maximum Pressure = 7.711 psi
Hydrostatic Pressure

LANDAU / P111-12 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG49
Cone Used: 4CH

CPT Date/Time: 07-11-02 10:23
Location: P111-12 NW TERM
Job Number: LANDAU/231009.31



LANDAU / P111-13 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG44
Cone Used: 4CH

CPT Date/Time: 07-10-02 09:06
Location: P111-13 NW TERMI
Job Number: LANDAU/231009.31

Tip Resistance

Qt (Ton/ft²)

Local Friction

Fs (Ton/ft²)

Friction Ratio

Fs/Qt (%)

Pore Pressure

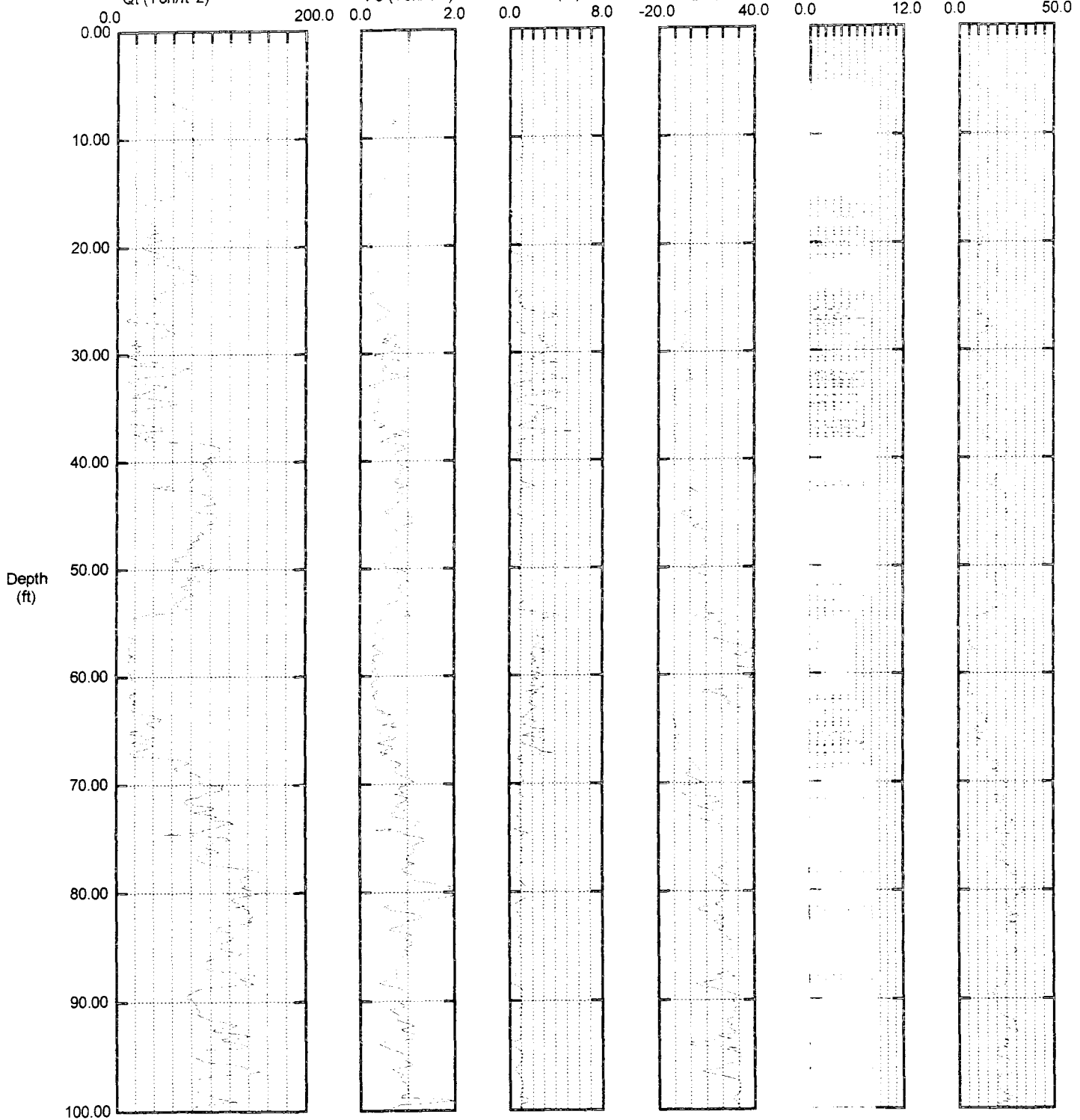
Pw (psi)

Soil Behavior Type*

Zone: UBC-1983

SPT N*

60% Hammer



1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

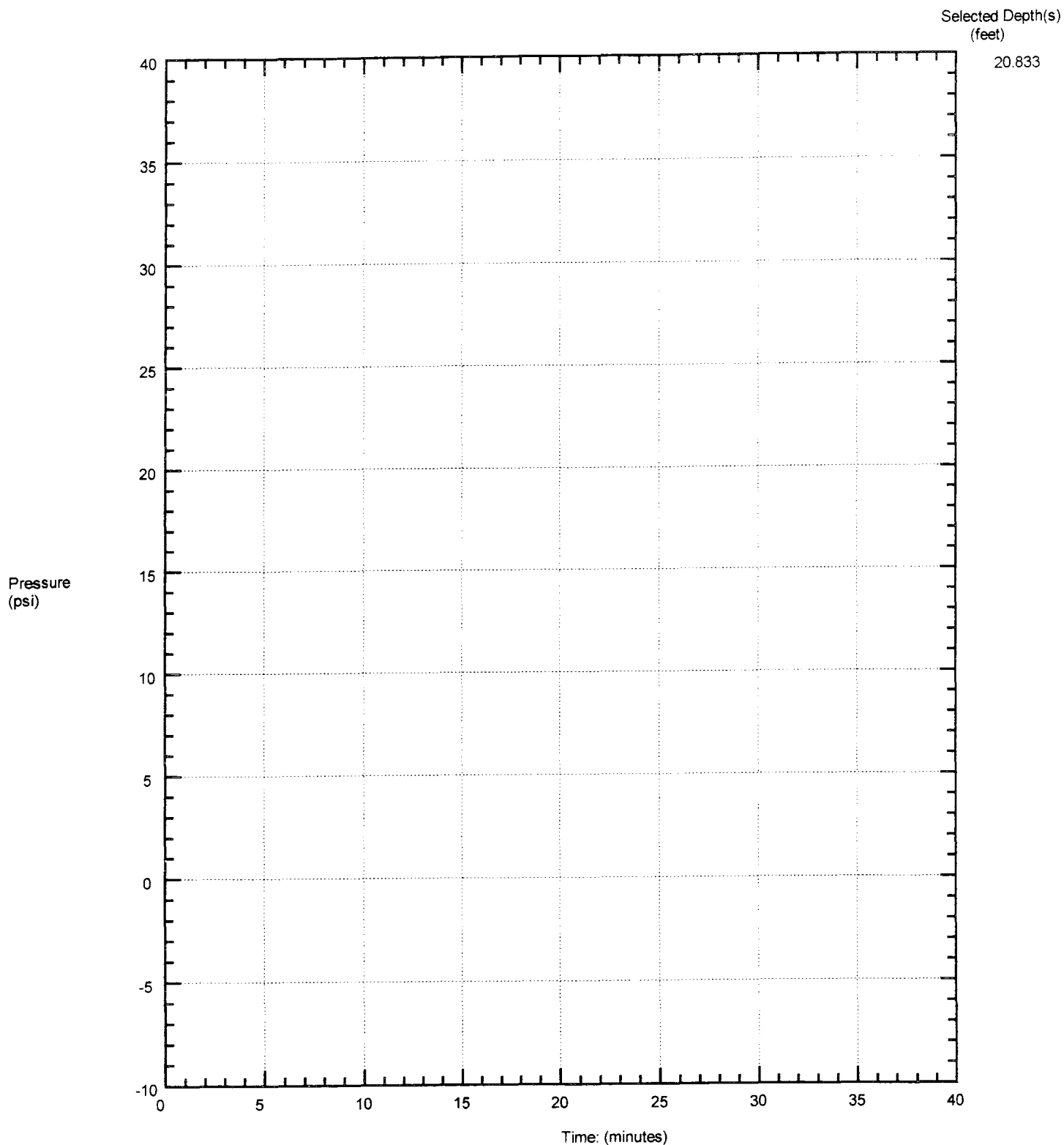
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-13 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG44
Cone Used: 4CH

CPT Date/Time: 07-10-02 09:06
Location: P111-13 NW TERMI
Job Number: LANDAU/231009.31

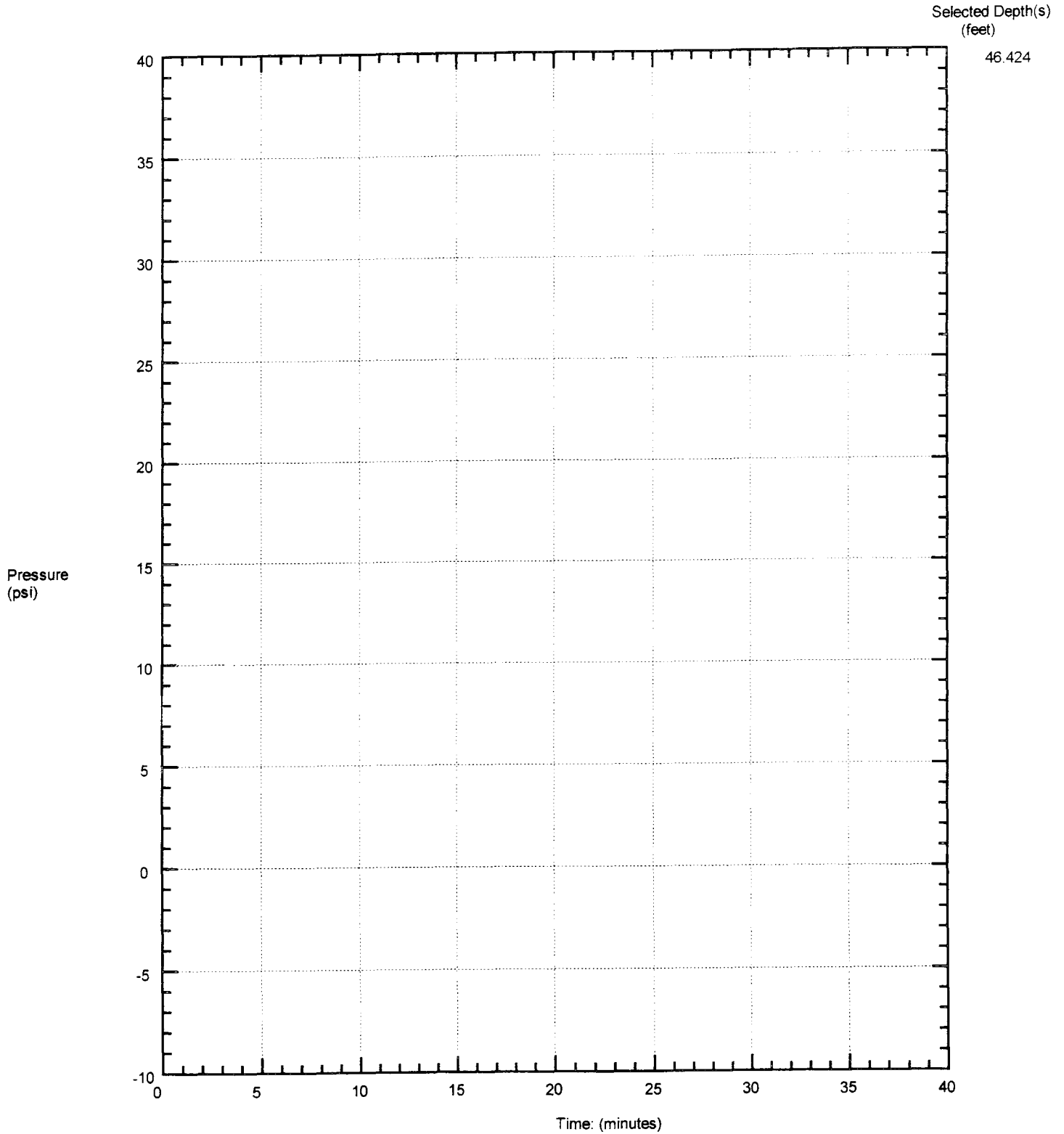


Maximum Pressure = 1.007 psi
Hydrostatic Pressure :

LANDAU / P111-13 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG44
Cone Used: 4CH

CPT Date/Time: 07-10-02 09:06
Location: P111-13 NW TERMINAL
Job Number: LANDAU/231009.31

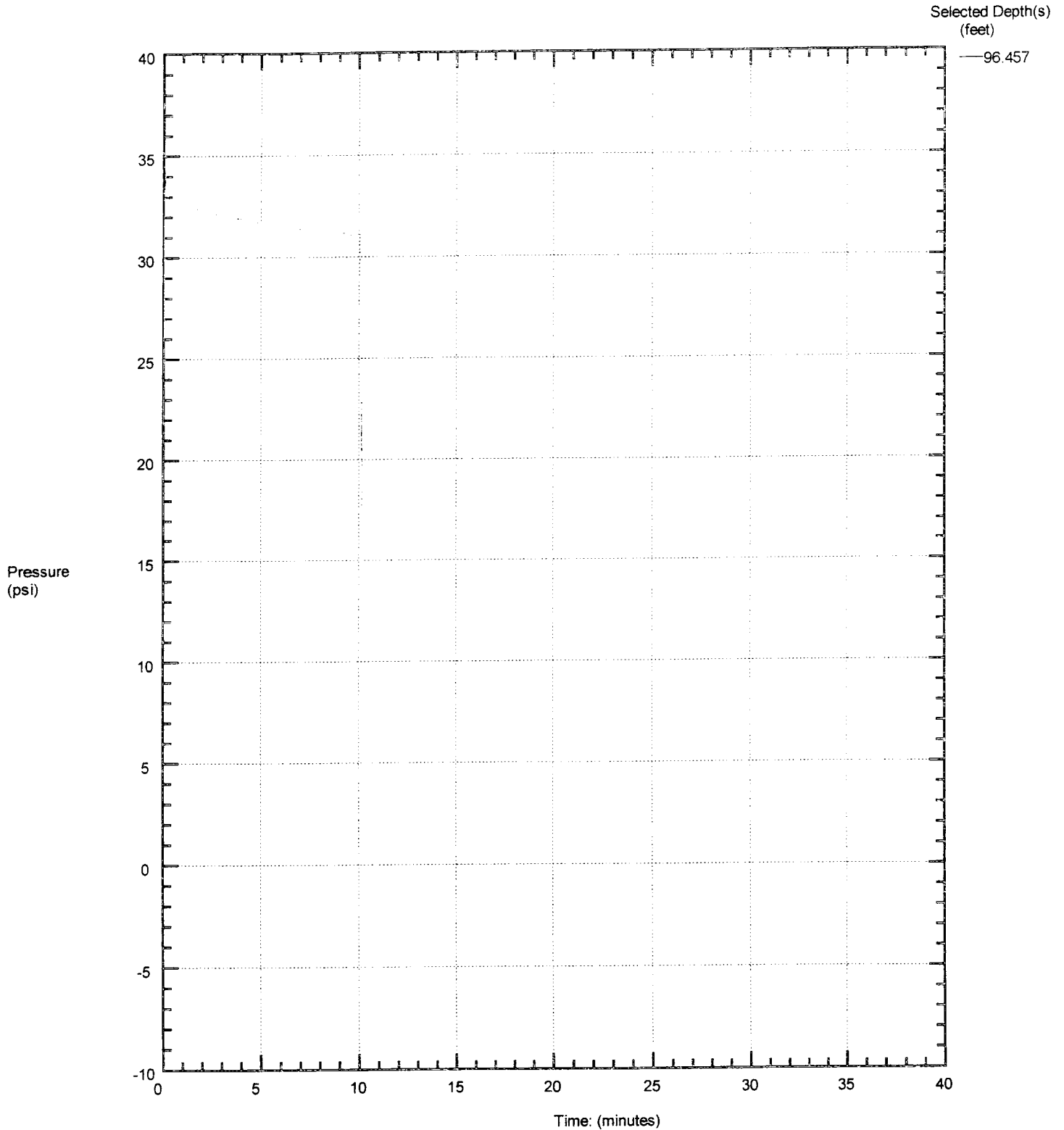


Maximum Pressure = 10.284 psi
Hydrostatic Pressure

LANDAU / P111-13 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG44
Cone Used: 4CH

CPT Date/Time: 07-10-02 09:06
Location: P111-13 NW TERMI
Job Number: LANDAU/231009.31

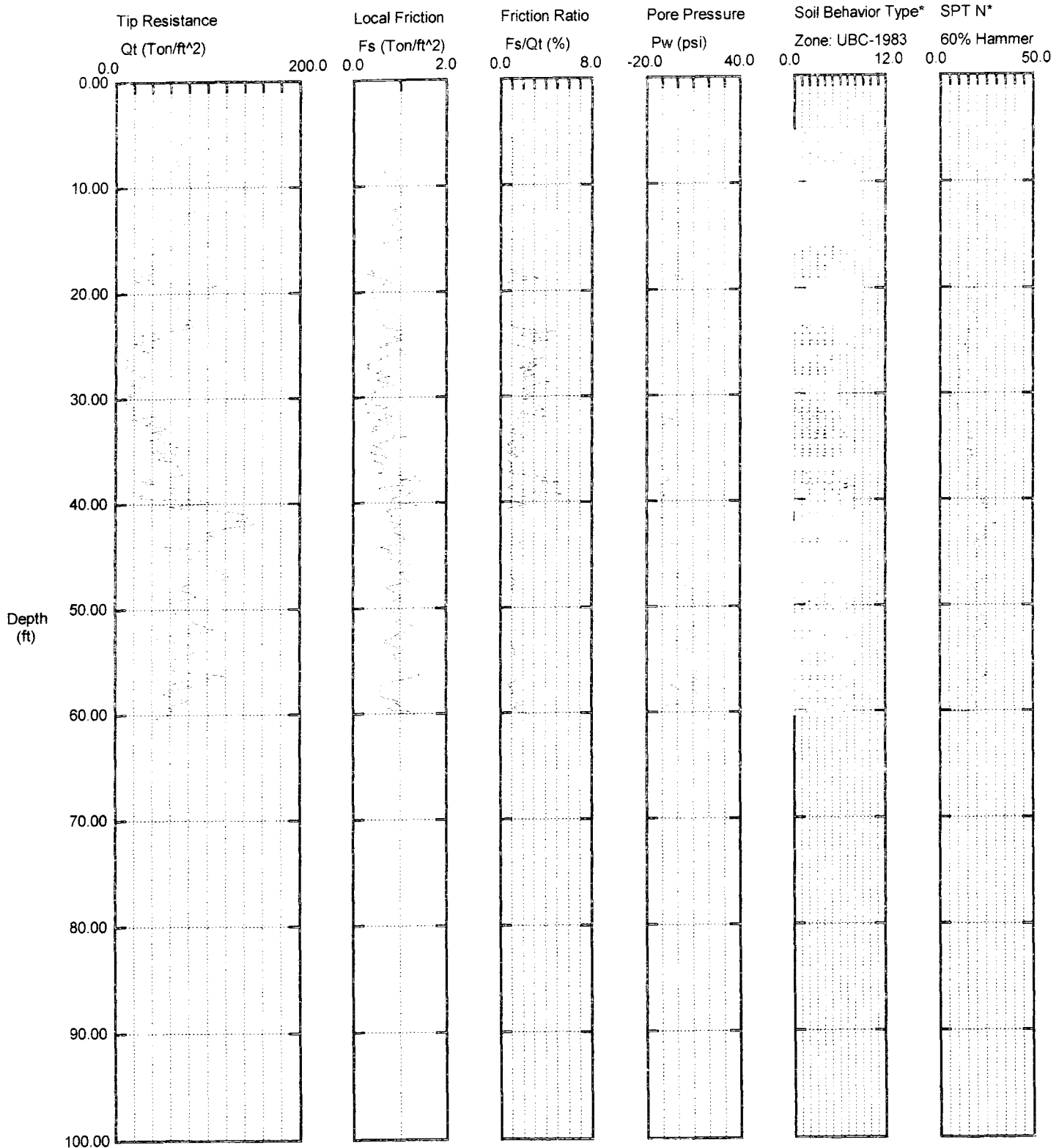


Maximum Pressure = 35.116 psi
Hydrostatic Pressure

LANDAU / P111-14 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG46
Cone Used: 4CH

CPT Date/Time: 07-10-02 13:39
Location: P111-14 NW TERM
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

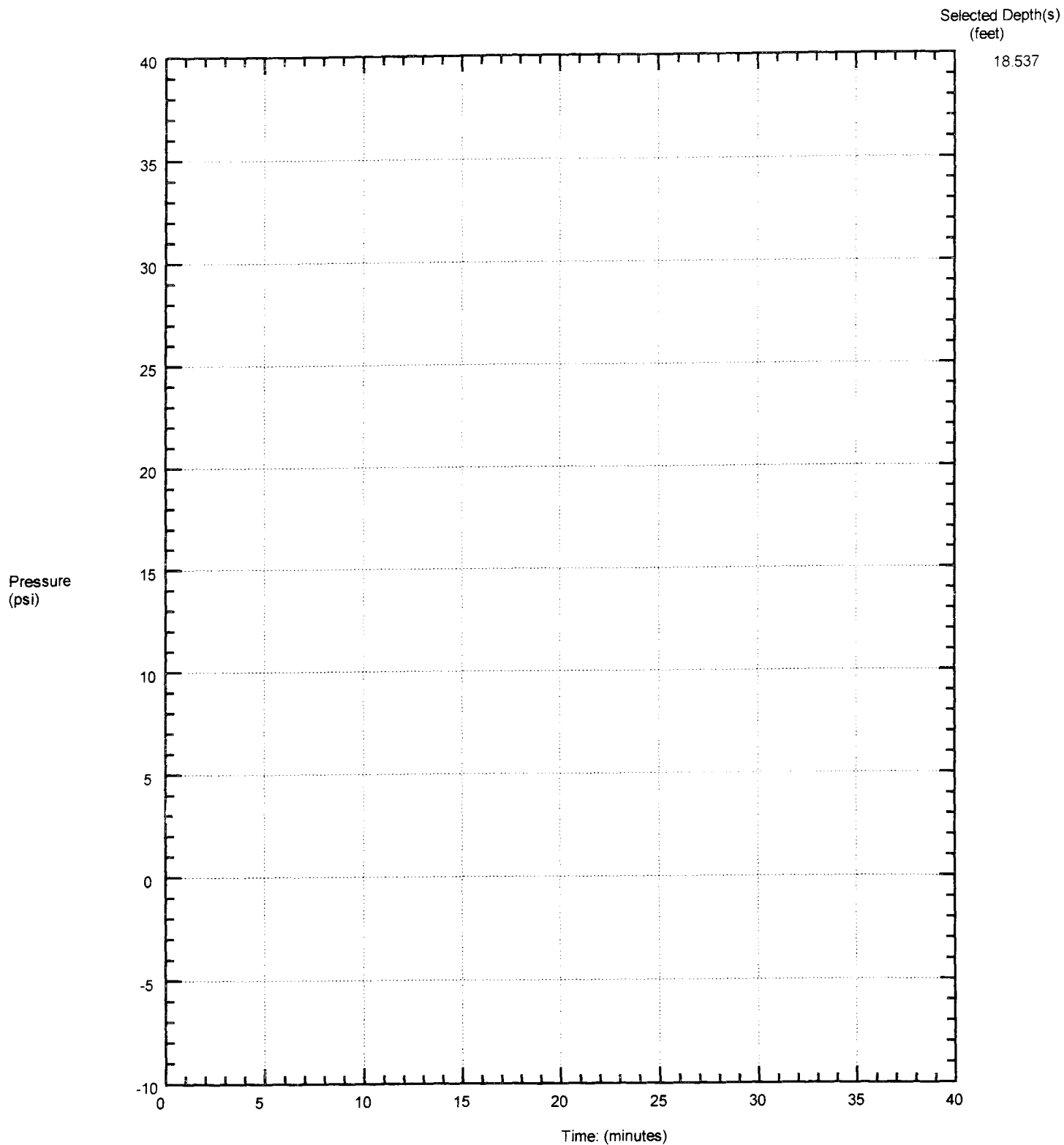
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravely sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-14 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG46
Cone Used: 4CH

CPT Date/Time: 07-10-02 13:39
Location: P111-14 NW TERM
Job Number: LANDAU/231009.31

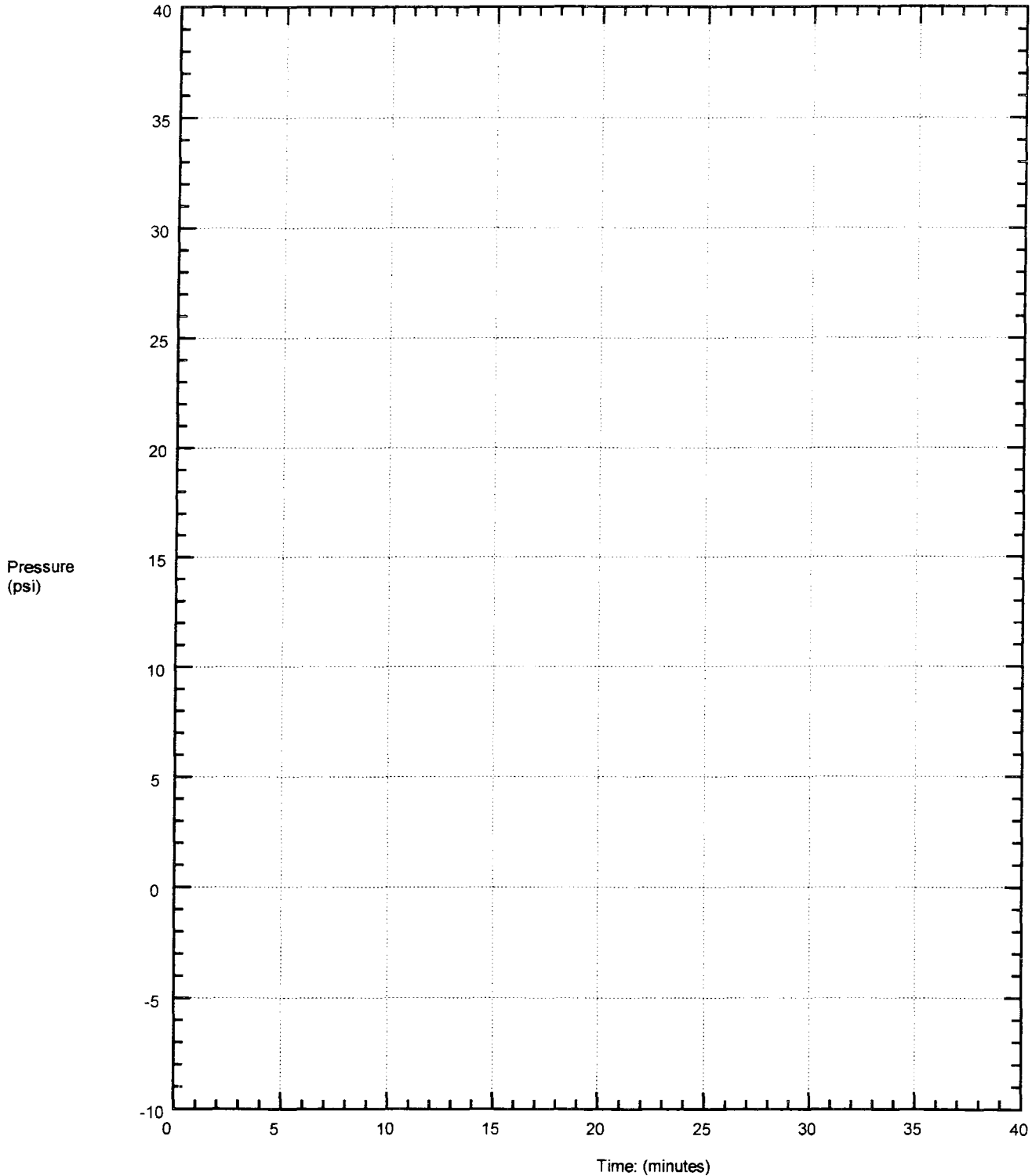


LANDAU / P111-14 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG46
Cone Used: 4CH

CPT Date/Time: 07-10-02 13:39
Location: P111-14 NW TERM
Job Number: LANDAU/231009.31

Selected Depth(s)
(feet)
60.532

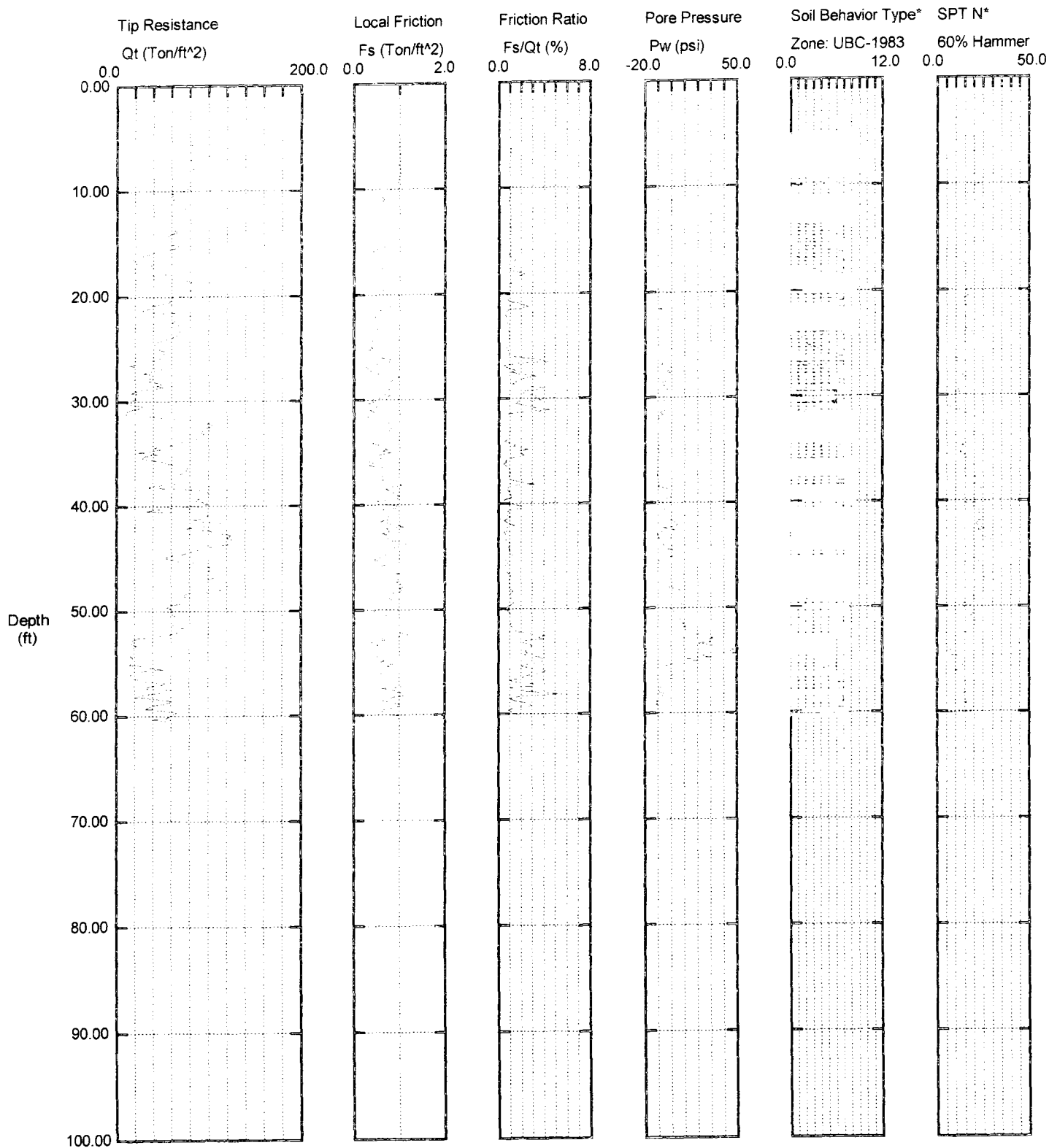


Maximum Pressure = 14.628 psi
Hydrostatic Pressure

LANDAU / P111-15 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG45
Cone Used: 4CH

CPT Date/Time: 07-10-02 10:55
Location: P111-15 NW TERMI
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

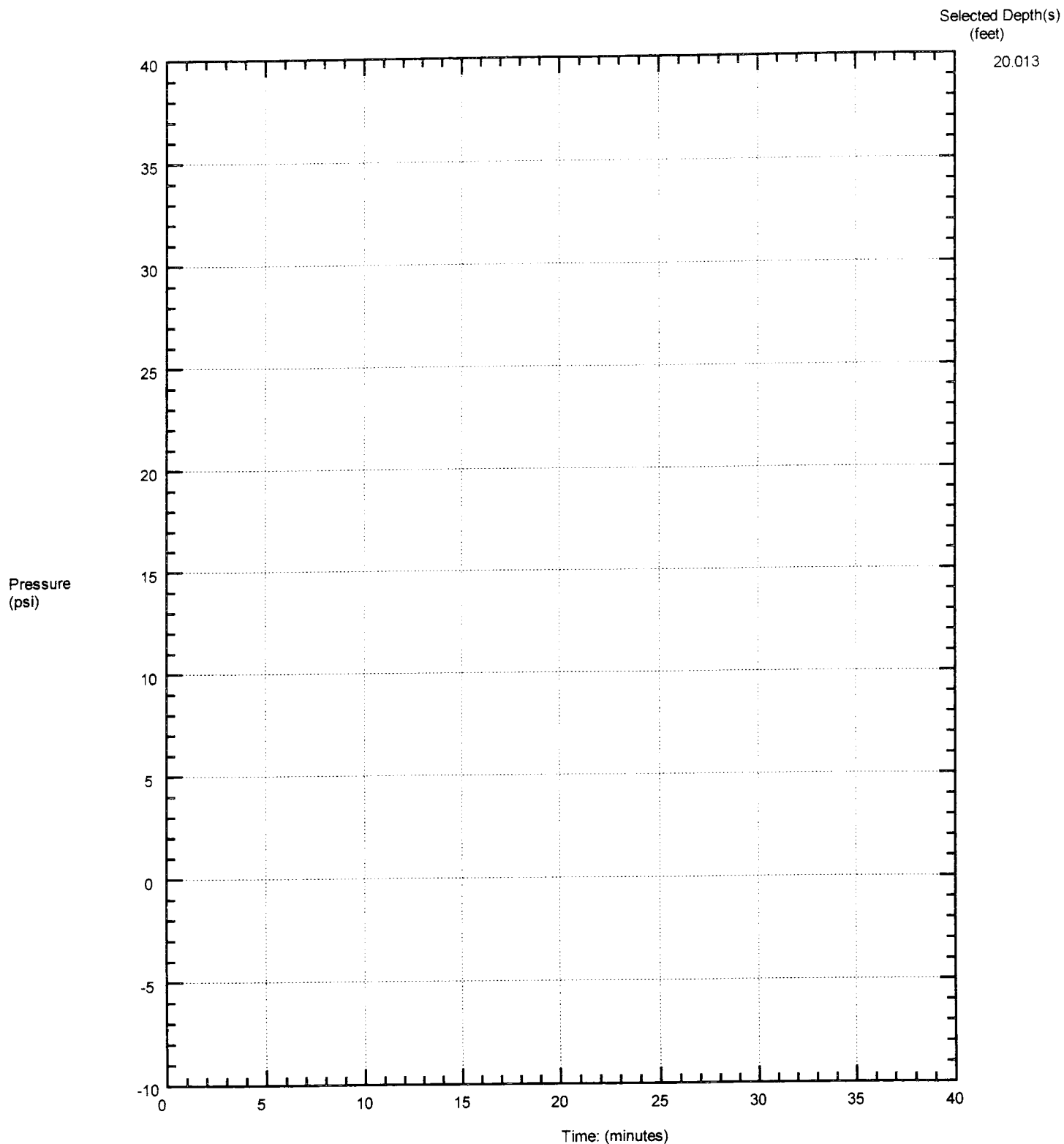
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-15 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG45
Cone Used: 4CH

CPT Date/Time: 07-10-02 10:55
Location: P111-15 NW TERMI
Job Number: LANDAU/231009.31

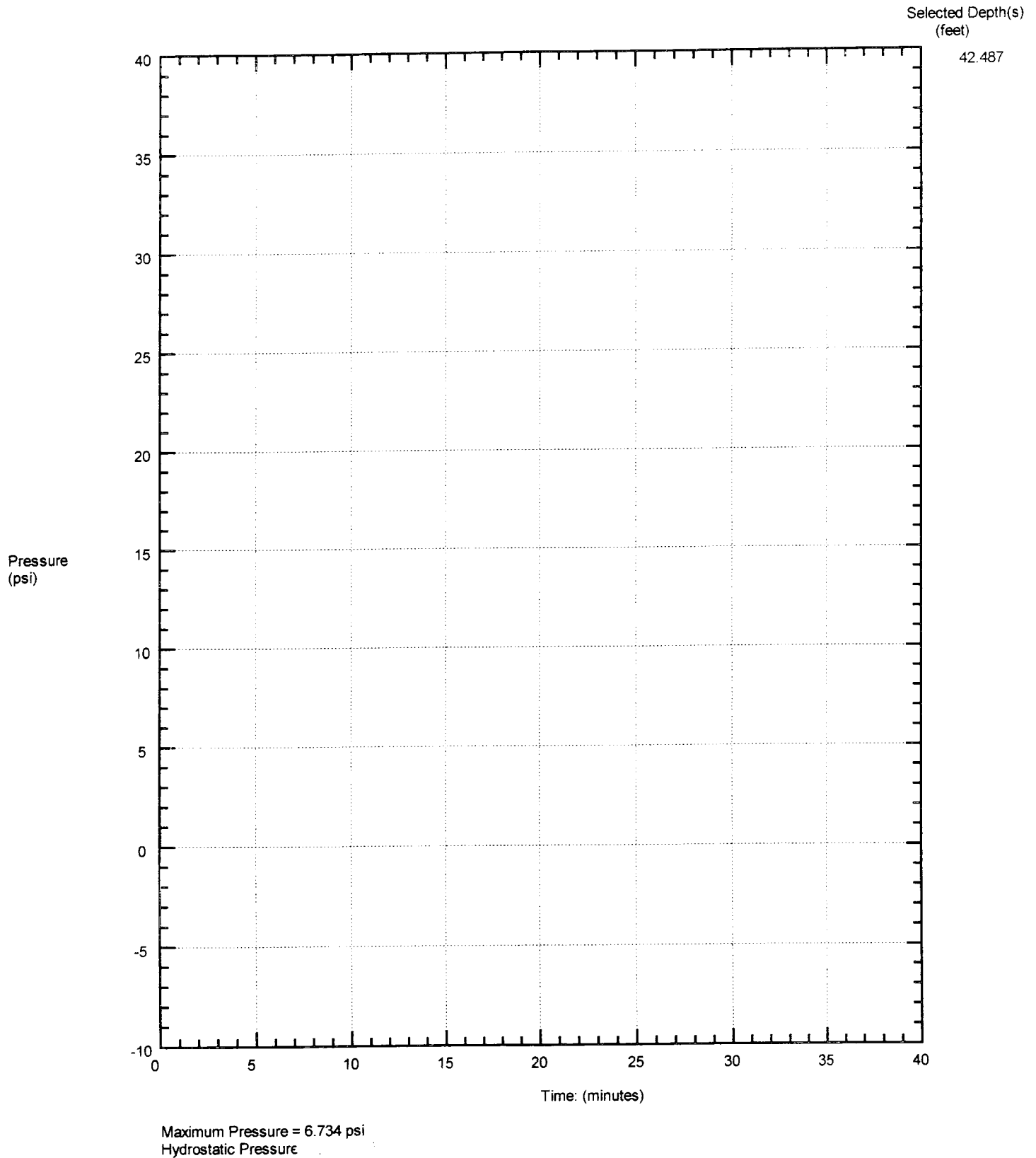


Maximum Pressure = -1.221 psi
Hydrostatic Pressure

LANDAU / P111-15 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG45
Cone Used: 4CH

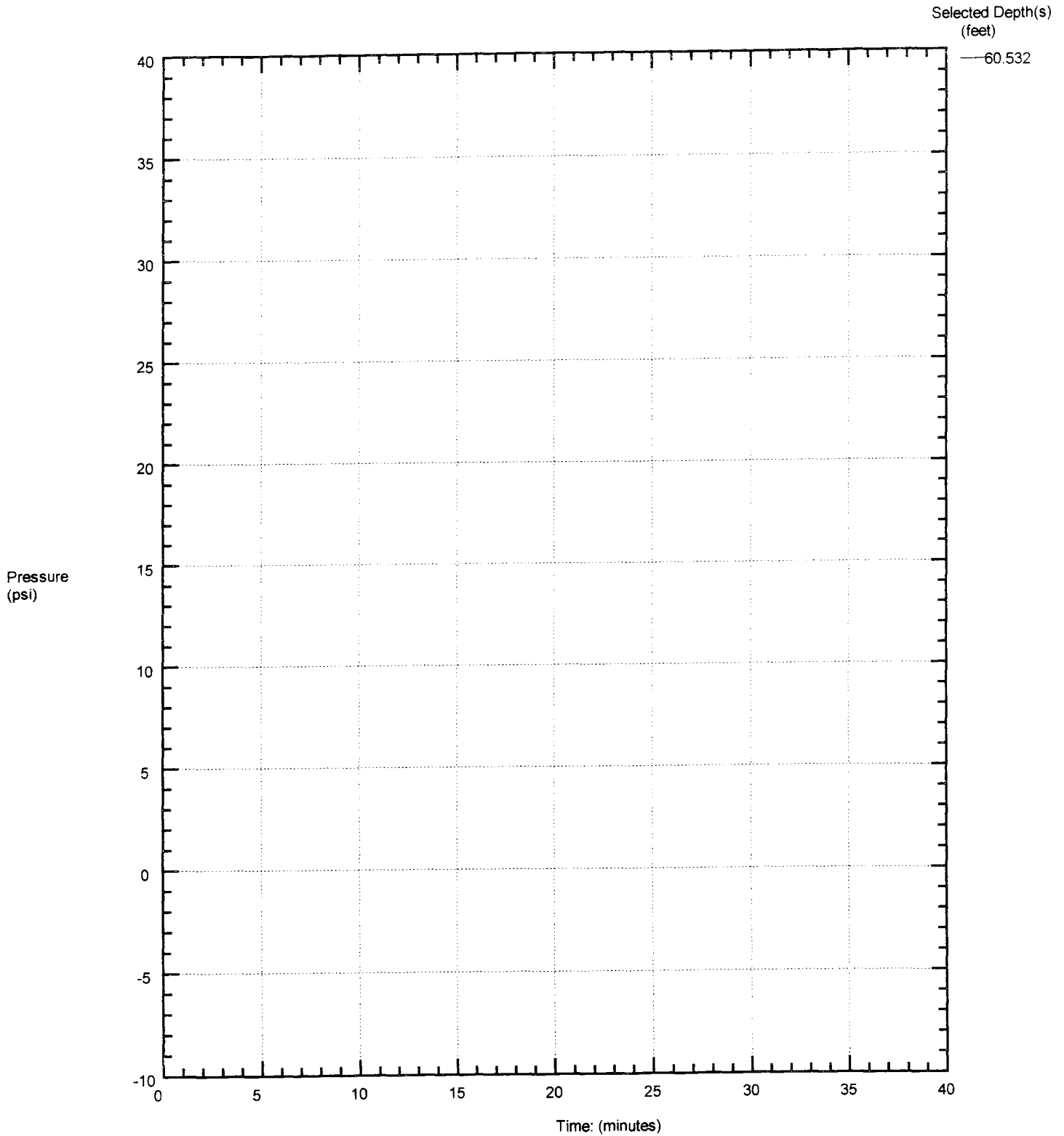
CPT Date/Time: 07-10-02 10:55
Location: P111-15 NW TERMI
Job Number: LANDAU/231009.31



LANDAU / P111-15 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG45
Cone Used: 4CH

CPT Date/Time: 07-10-02 10:55
Location: P111-15 NW TERM
Job Number: LANDAU/231009.31

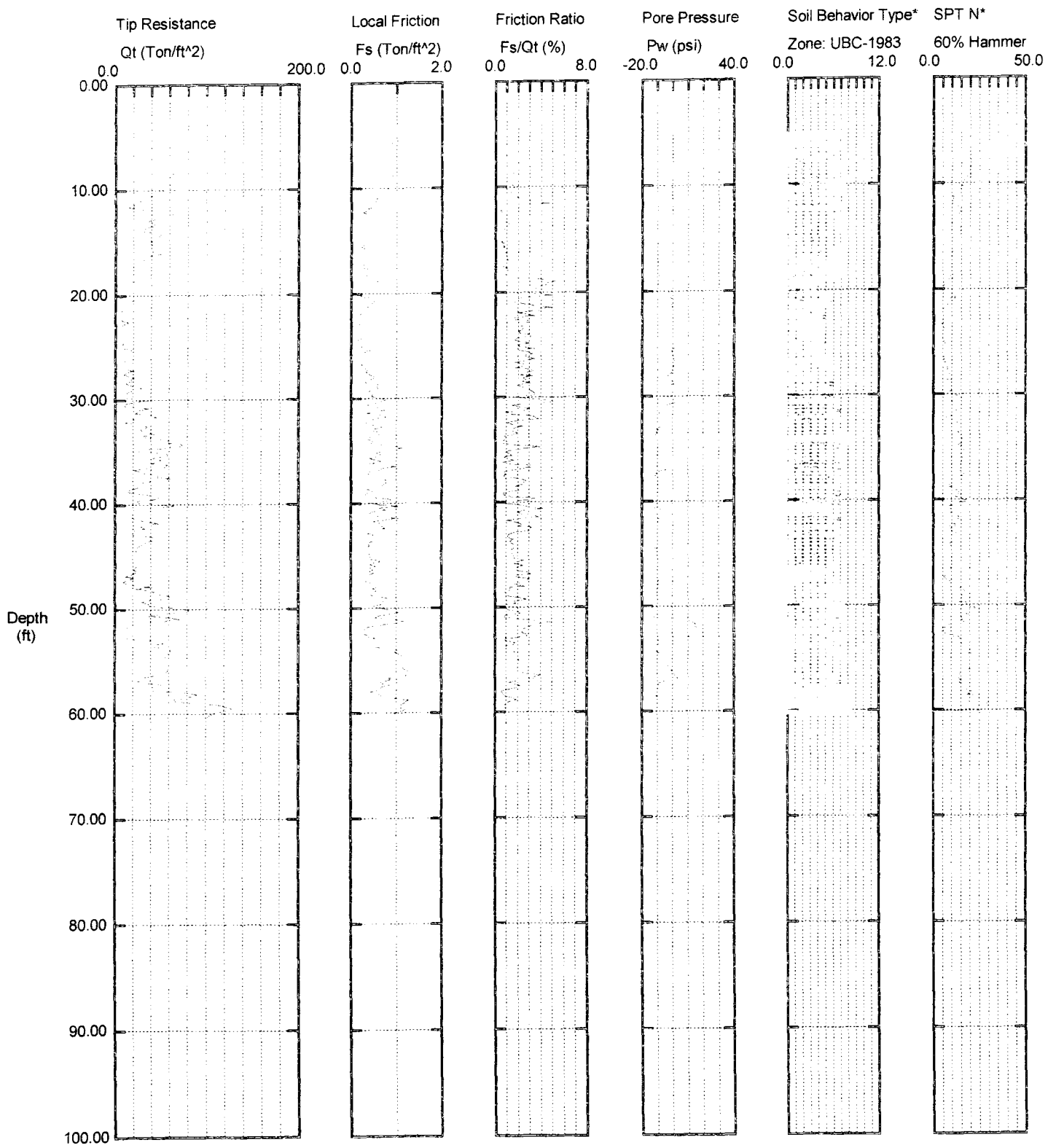


Maximum Pressure = 13.713 psi
Hydrostatic Pressure

LANDAU / P111-16 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG66
Cone Used: 4CH

CPT Date/Time: 07-16-02 11:31
Location: P111-16 NW TERMI
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

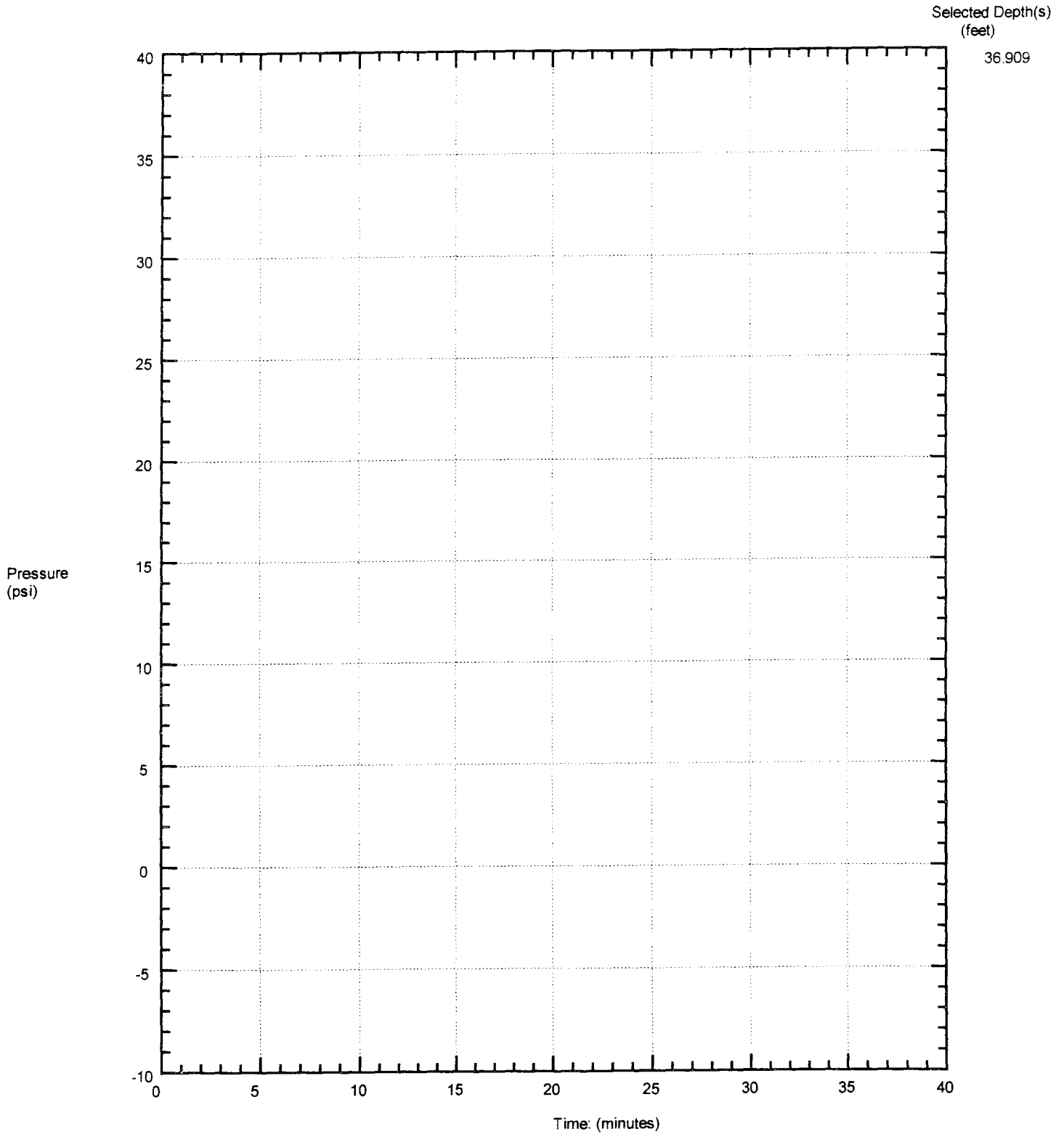
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-16 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG66
Cone Used: 4CH

CPT Date/Time: 07-16-02 11:31
Location: P111-16 NW TERMI
Job Number: LANDAU/231009.31

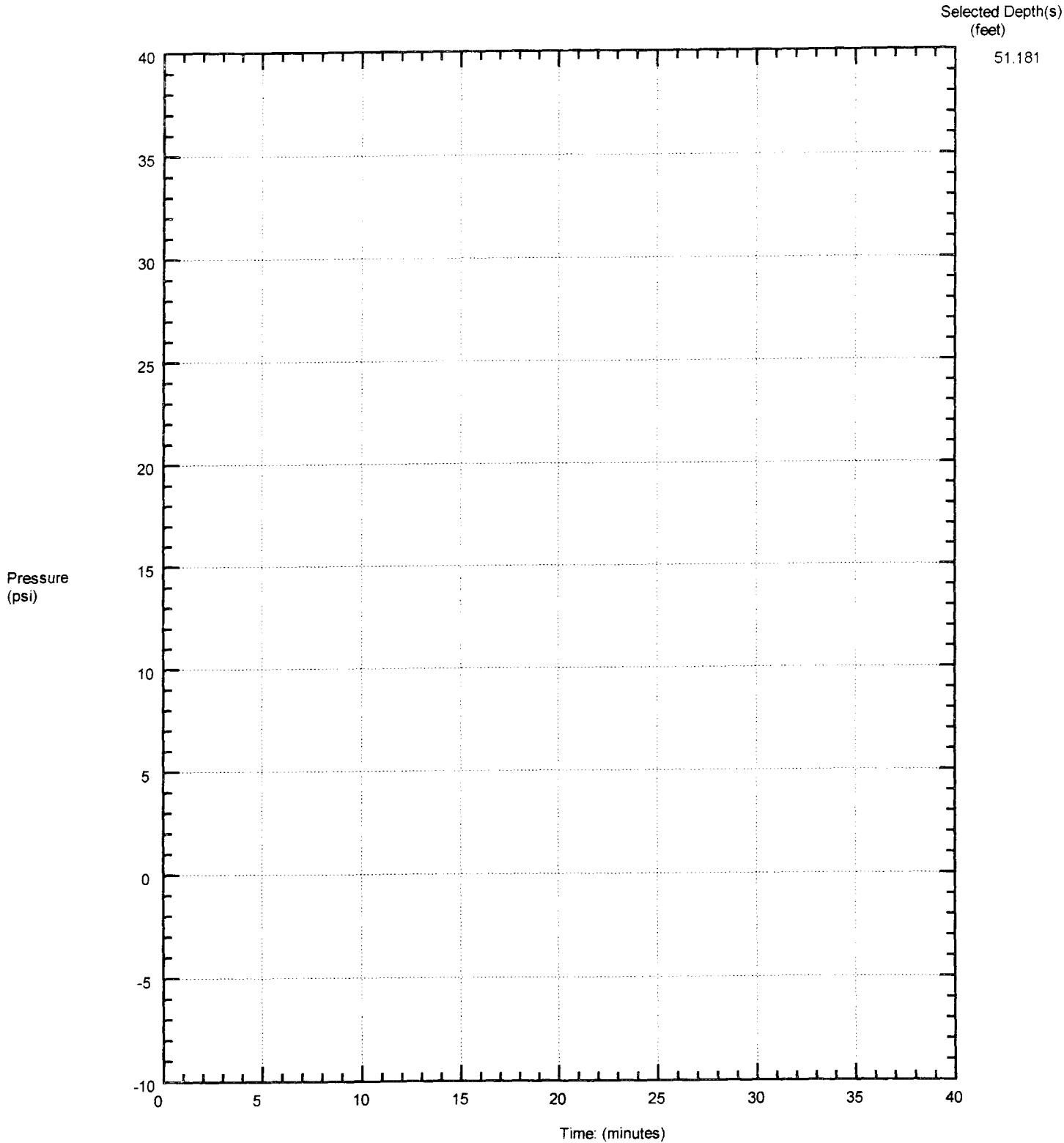


Maximum Pressure = 3.937 psi
Hydrostatic Pressure

LANDAU / P111-16 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG66
Cone Used: 4CH

CPT Date/Time: 07-16-02 11:31
Location: P111-16 NW TERMINAL
Job Number: LANDAU/231009.31

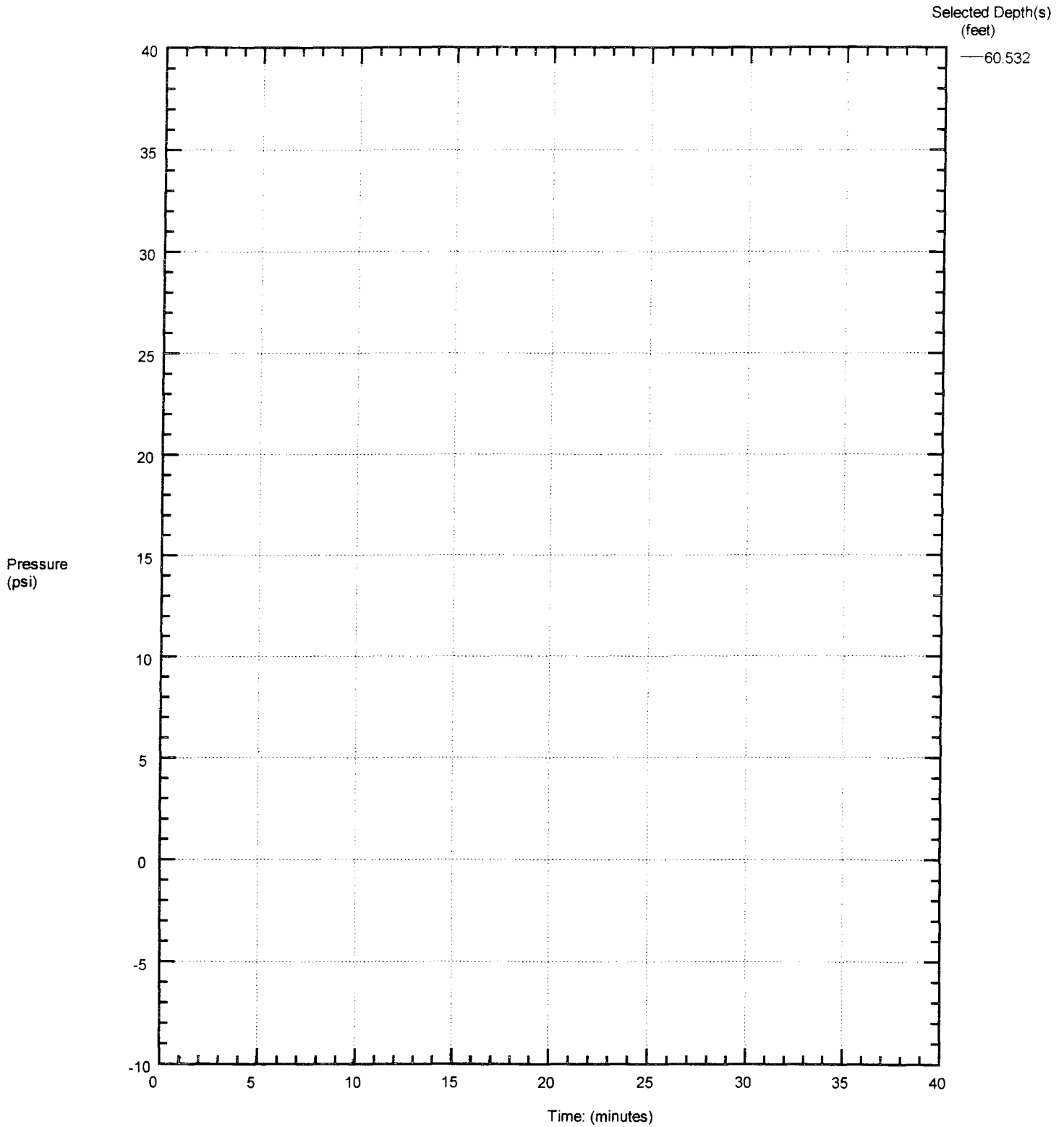


Maximum Pressure = 10.6 psi
Hydrostatic Pressure

LANDAU / P111-16 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG66
Cone Used: 4CH

CPT Date/Time: 07-16-02 11:31
Location: P111-16 NW TERMI
Job Number: LANDAU/231009.31

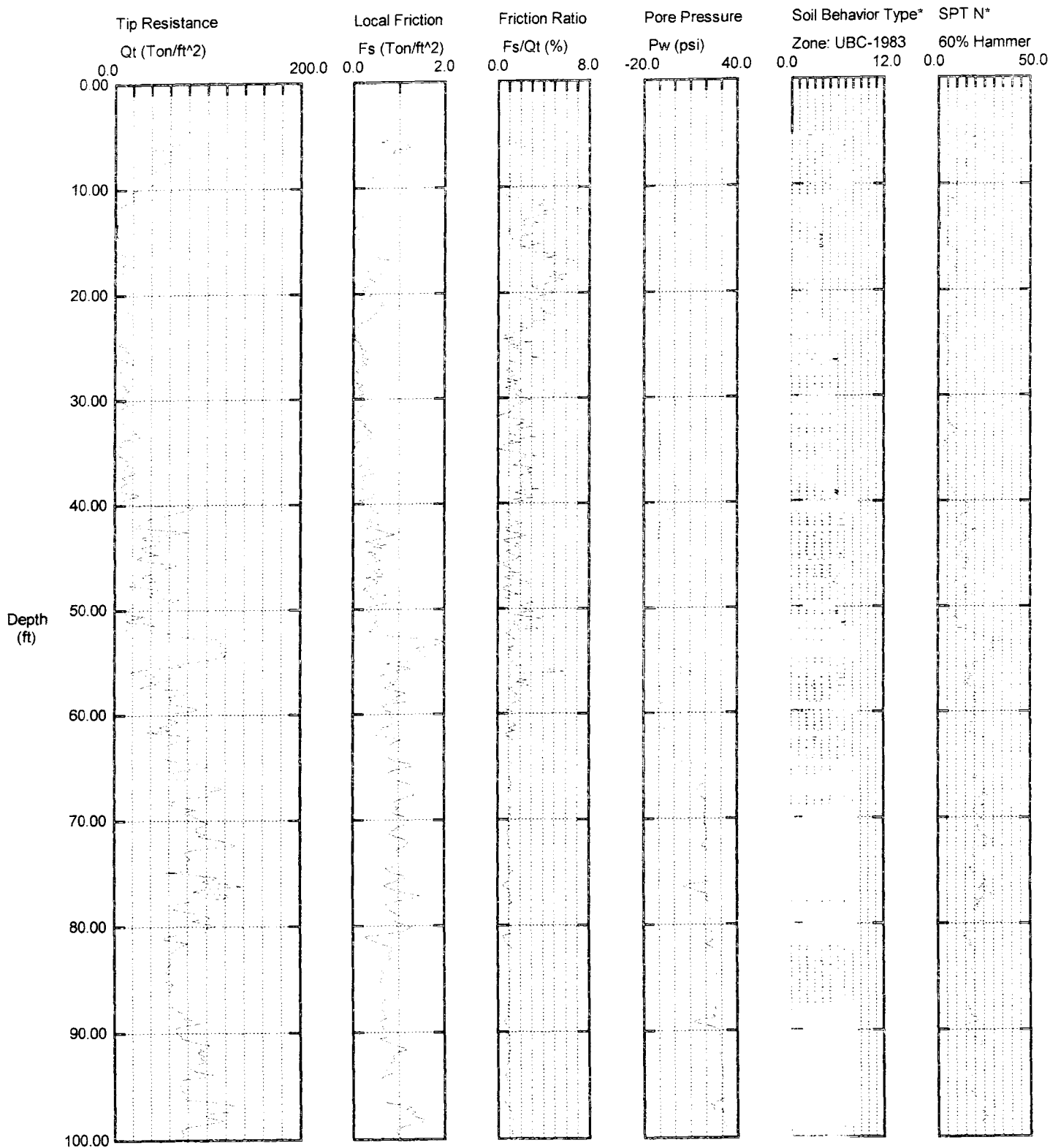


Maximum Pressure = 14.008 psi
Hydrostatic Pressure

LANDAU / P111-17 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG65
Cone Used: 4CH

CPT Date/Time: 07-16-02 09:44
Location: P111-17 NW TERMI
Job Number: LANDAU/231009.31



Maximum Depth = 100.56 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

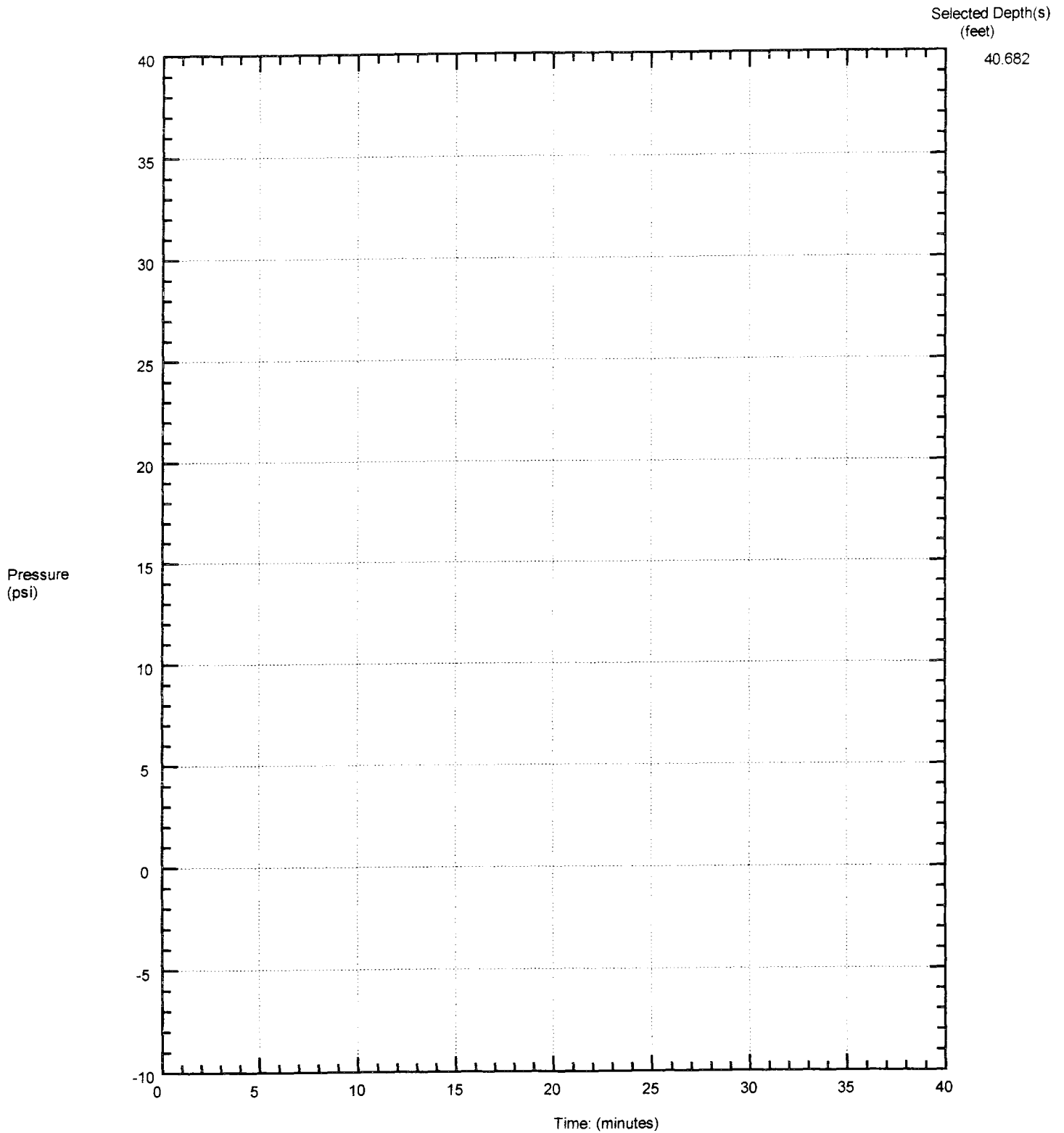
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-17 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG65
Cone Used: 4CH

CPT Date/Time: 07-16-02 09:44
Location: P111-17 NW TERMI
Job Number: LANDAU/231009.31



Maximum Pressure = 6.633 psi
Hydrostatic Pressure

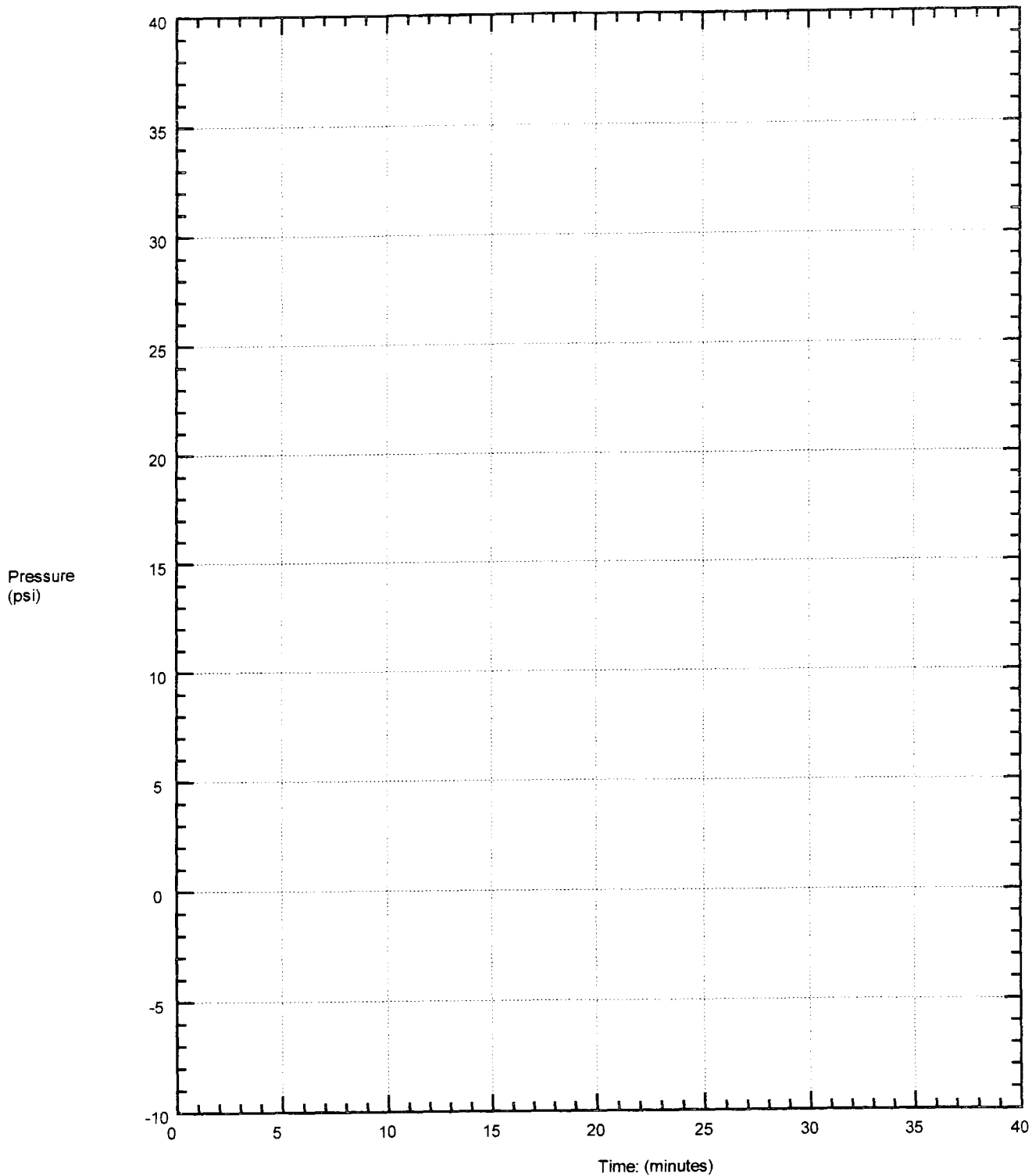
LANDAU / P111-17 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG65
Cone Used: 4CH

CPT Date/Time: 07-16-02 09:44
Location: P111-17 NW TERMI
Job Number: LANDAU/231009.31

Selected Depth(s)
(feet)

53.97

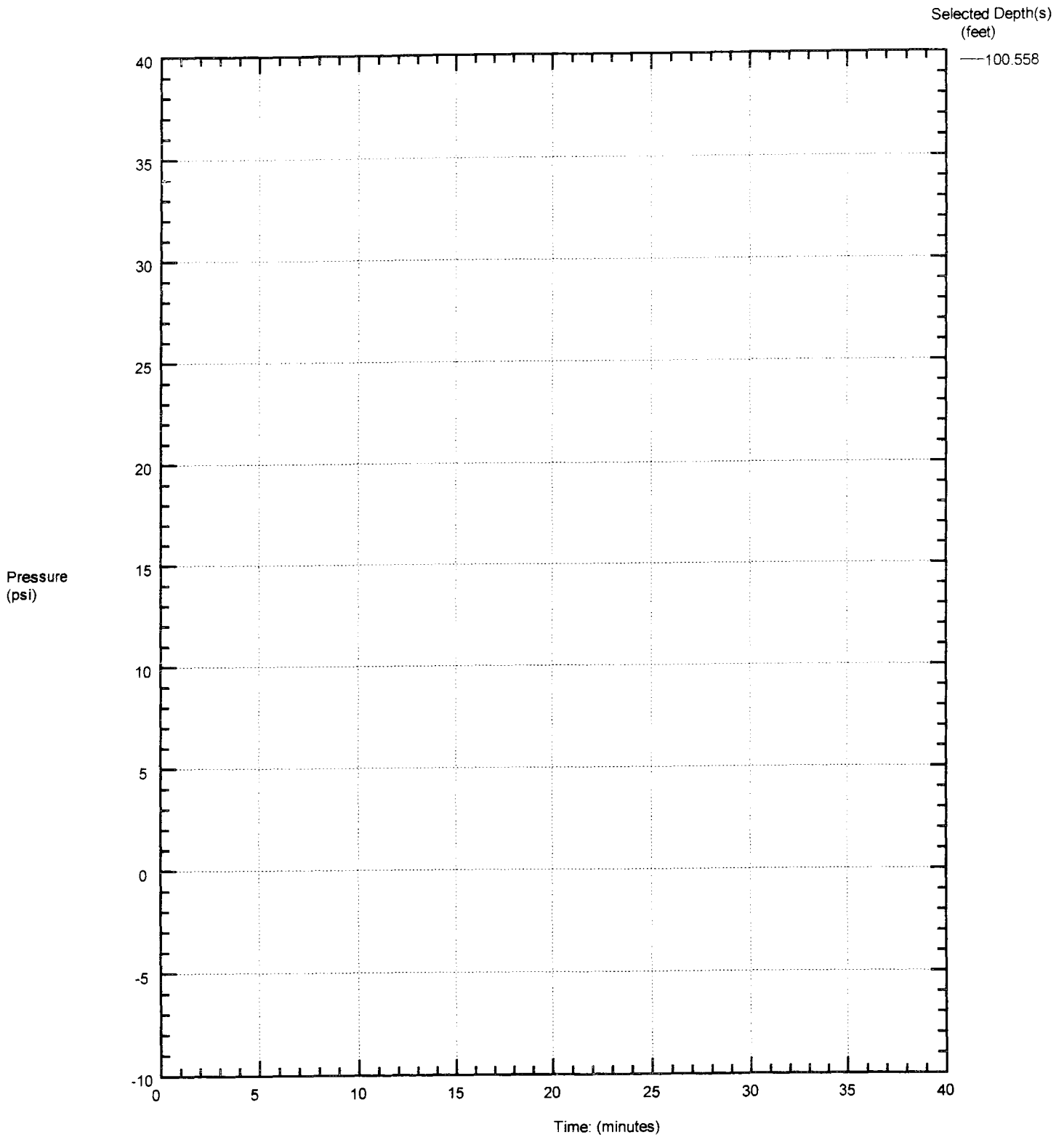


Maximum Pressure = 12.268 psi
Hydrostatic Pressure

LANDAU / P111-17 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG65
Cone Used: 4CH

CPT Date/Time: 07-16-02 09:44
Location: P111-17 NW TERMI
Job Number: LANDAU/231009.31

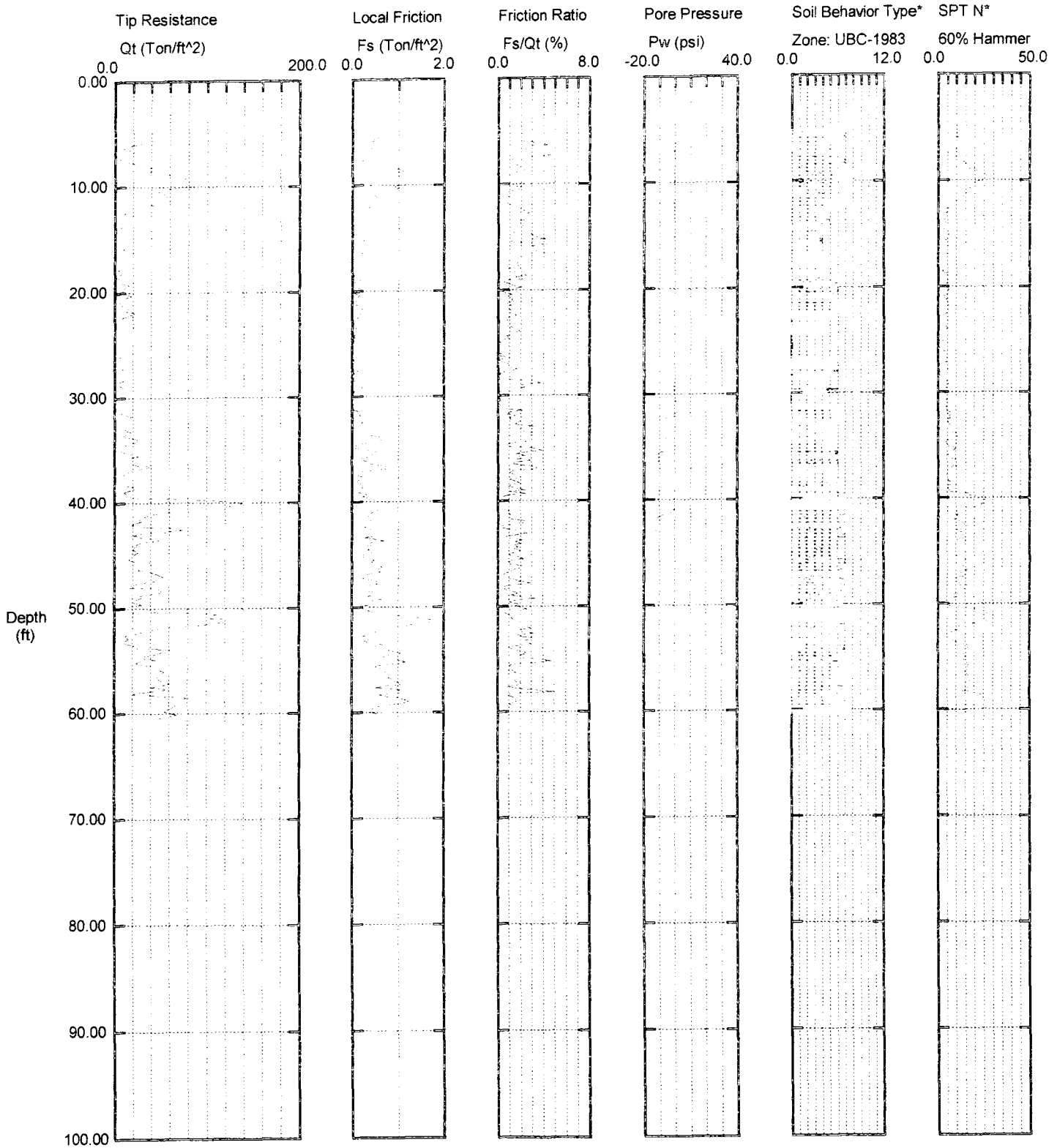


Maximum Pressure = 34.058 psi
Hydrostatic Pressure

LANDAU / P111-18 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG68
Cone Used: 4CH

CPT Date/Time: 07-16-02 13:40
Location: P111-18 NW TERMI
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-18 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH

Sounding: FILG68

Cone Used: 4CH

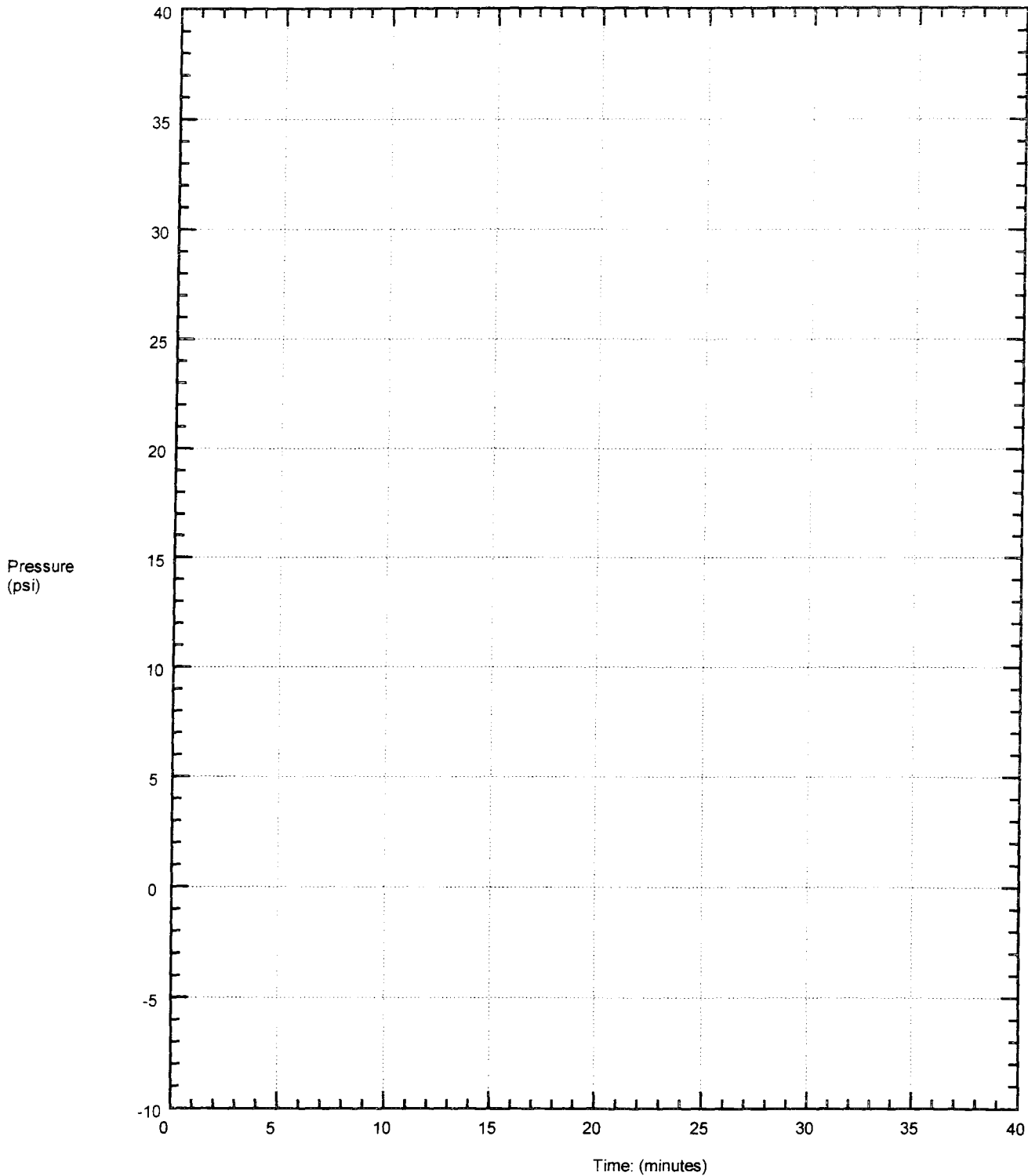
CPT Date/Time: 07-16-02 13:40

Location: P111-18 NW TERMI

Job Number: LANDAU/231009.31

Selected Depth(s)
(feet)

40.846

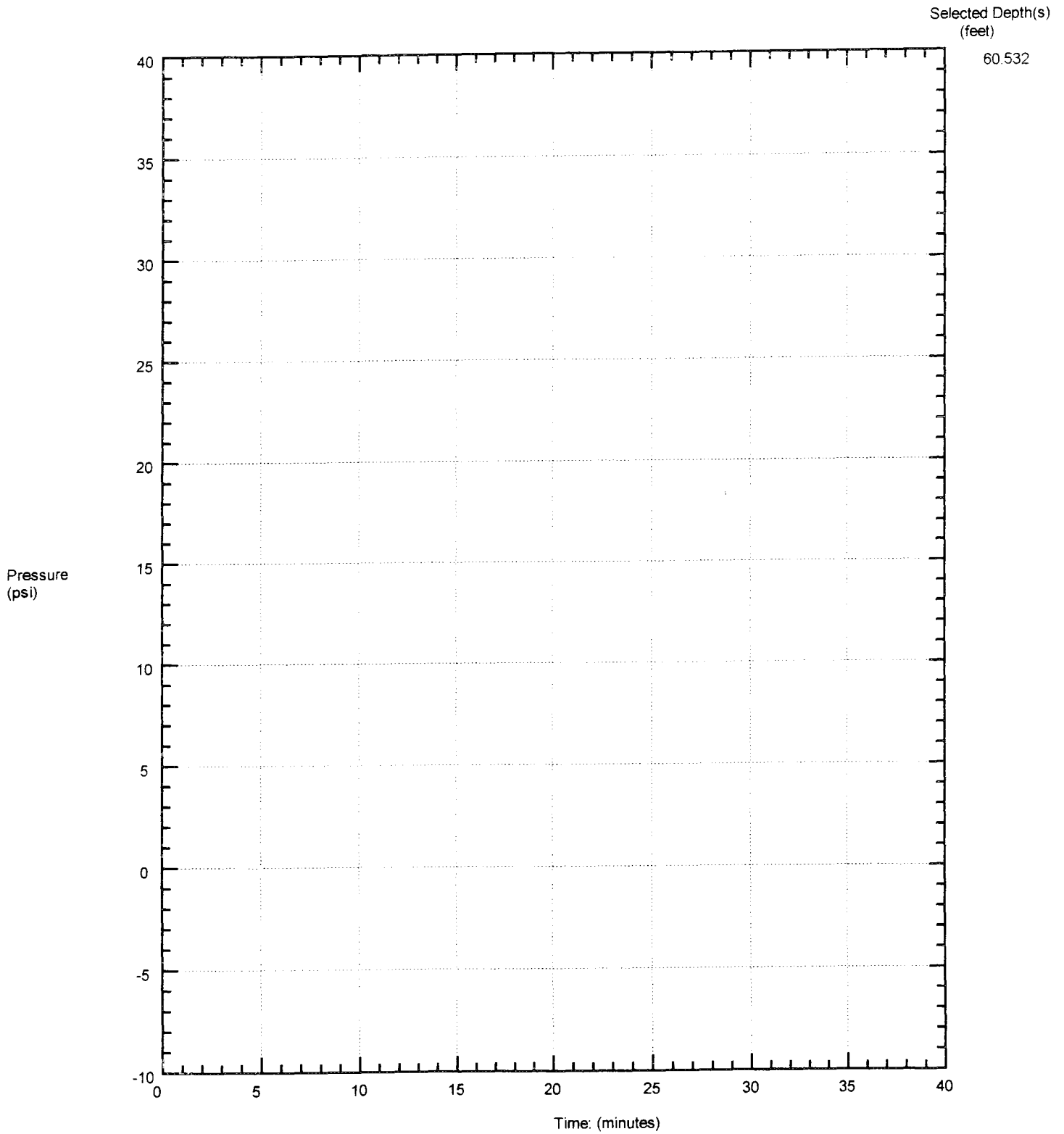


Maximum Pressure = 6.134 psi
Hydrostatic Pressure

LANDAU / P111-18 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG68
Cone Used: 4CH

CPT Date/Time: 07-16-02 13:40
Location: P111-18 NW TERMI
Job Number: LANDAU/231009.31

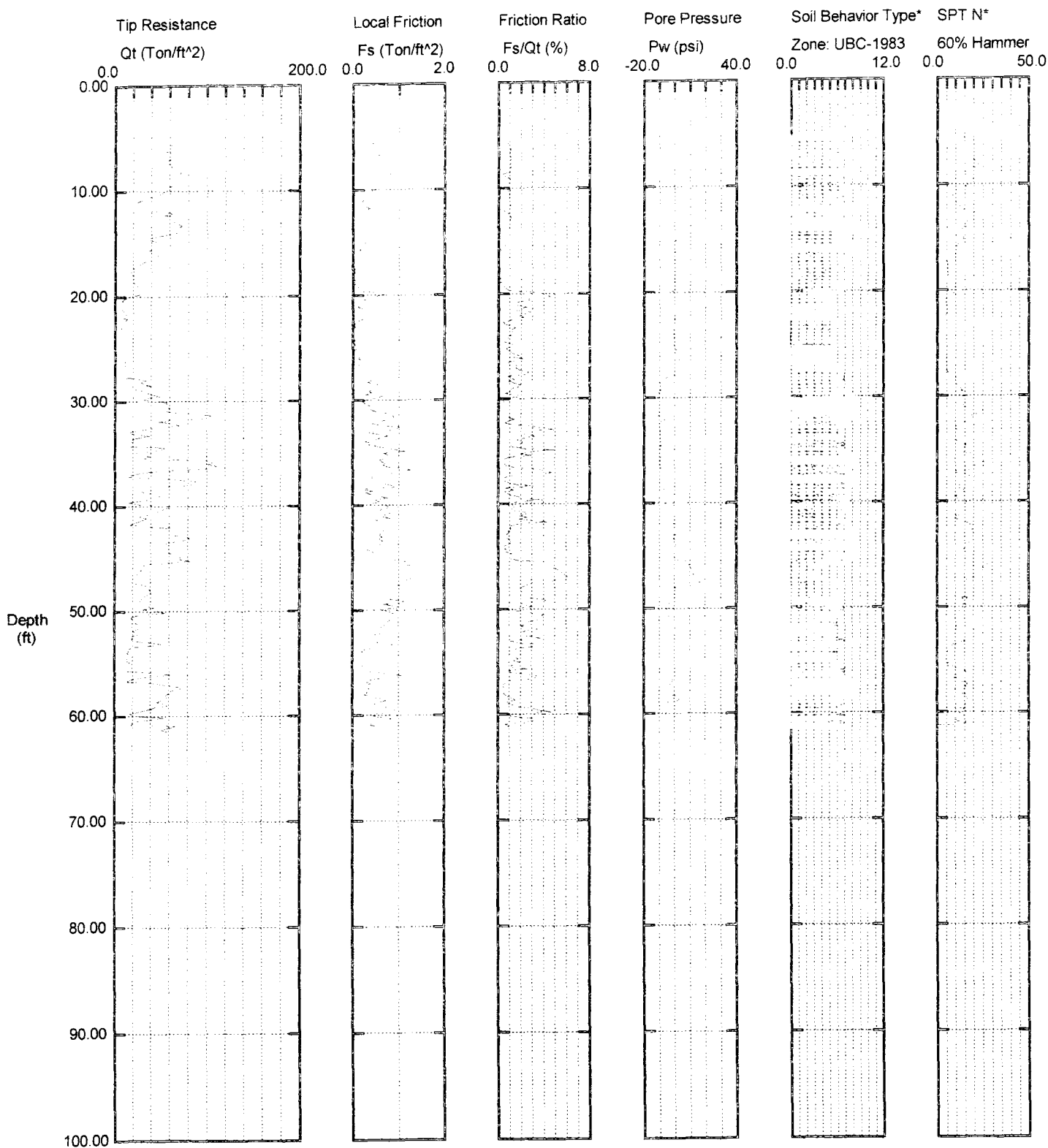


Maximum Pressure = 13.947 psi
Hydrostatic Pressure

LANDAU / P111-19 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG40
Cone Used: 4CH

CPT Date/Time: 07-09-02 12:54
Location: P111-19 NW TERMI
Job Number: LANDAU/231009.31



1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

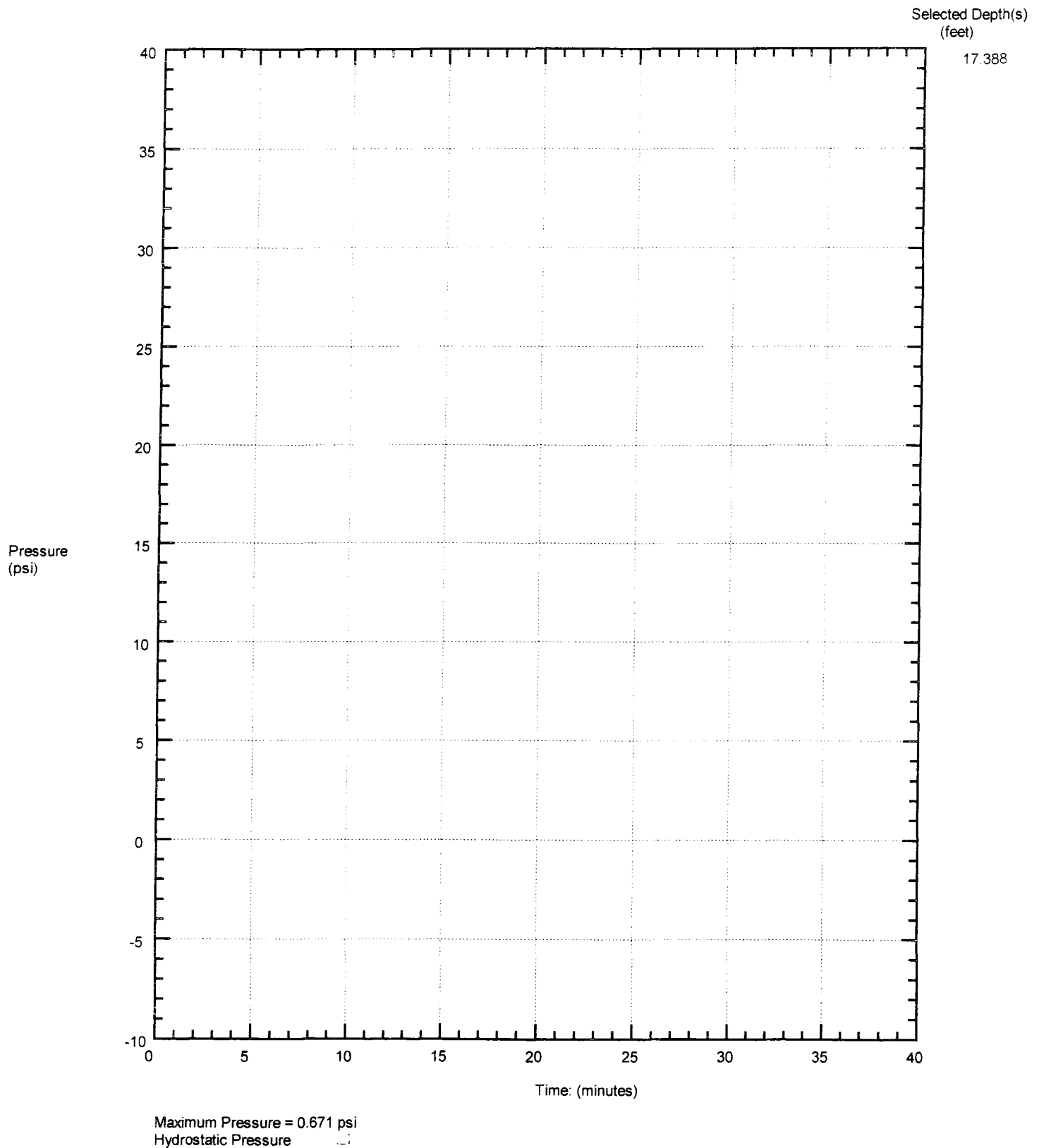
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-19 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG40
Cone Used: 4CH

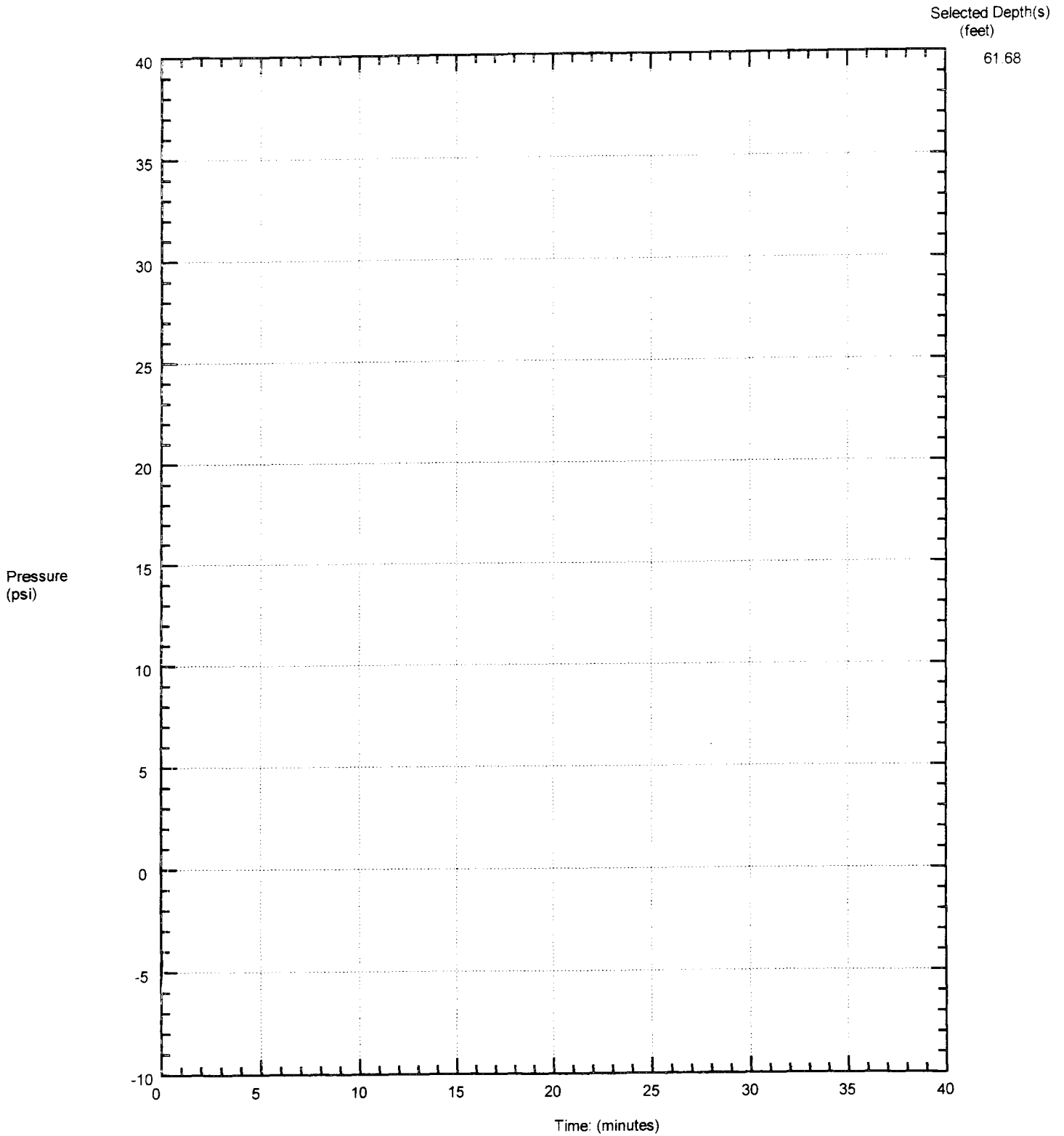
CPT Date/Time: 07-09-02 12:54
Location: P111-19 NW TERMI
Job Number: LANDAU/231009.31



LANDAU / P111-19 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG40
Cone Used: 4CH

CPT Date/Time: 07-09-02 12:54
Location: P111-19 NW TERMI
Job Number: LANDAU/231009.31



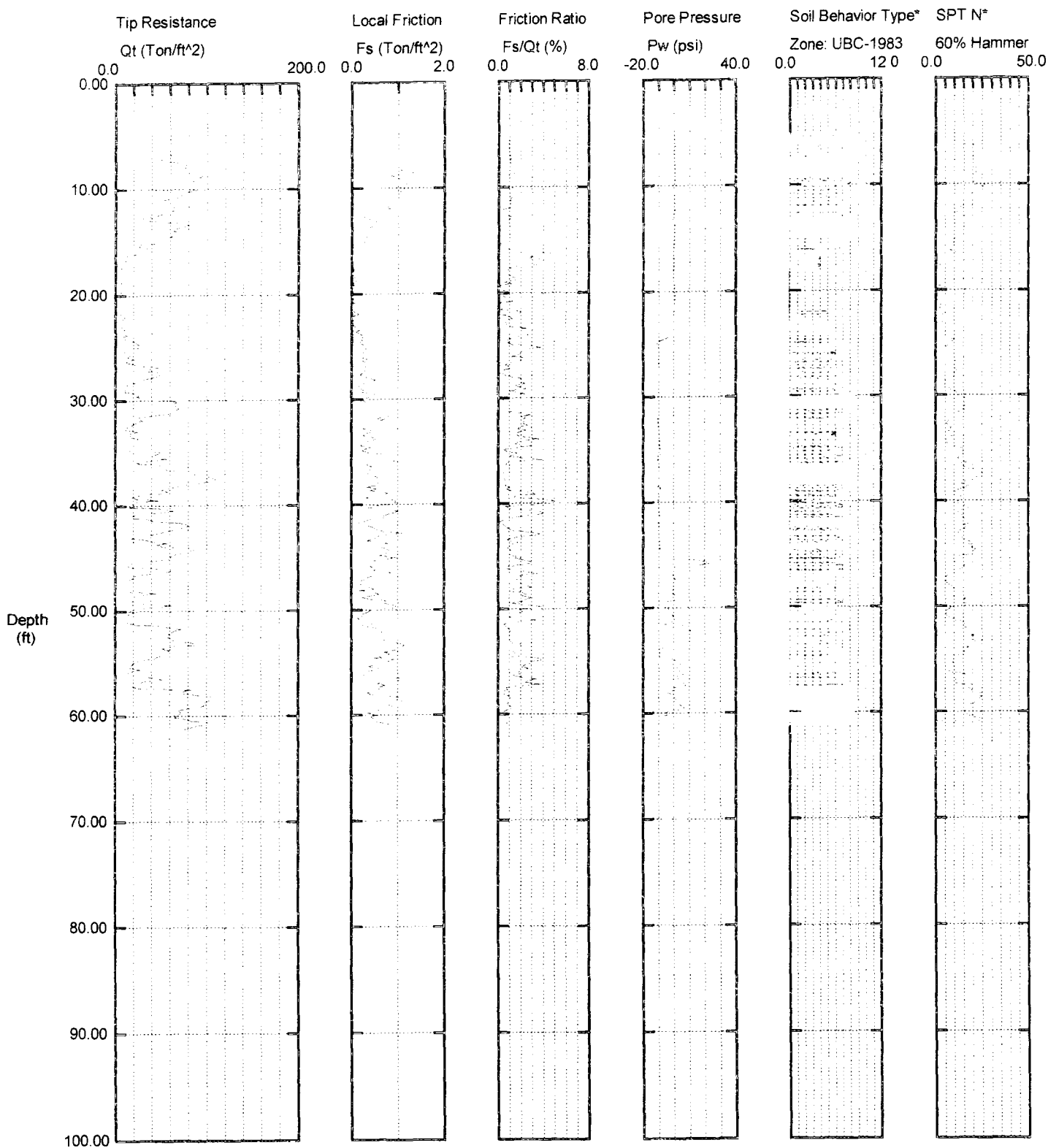
Maximum Pressure = 16.52 psi
Hydrostatic Pressure -

*Soil behavior type and SPT based on data from UBC-1983

LANDAU / P111-20 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG39
Cone Used: 4CH

CPT Date/Time: 07-09-02 11:06
Location: P111-20 NW TERMI
Job Number: LANDAU/231009.31



Maximum Depth = 61.35 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

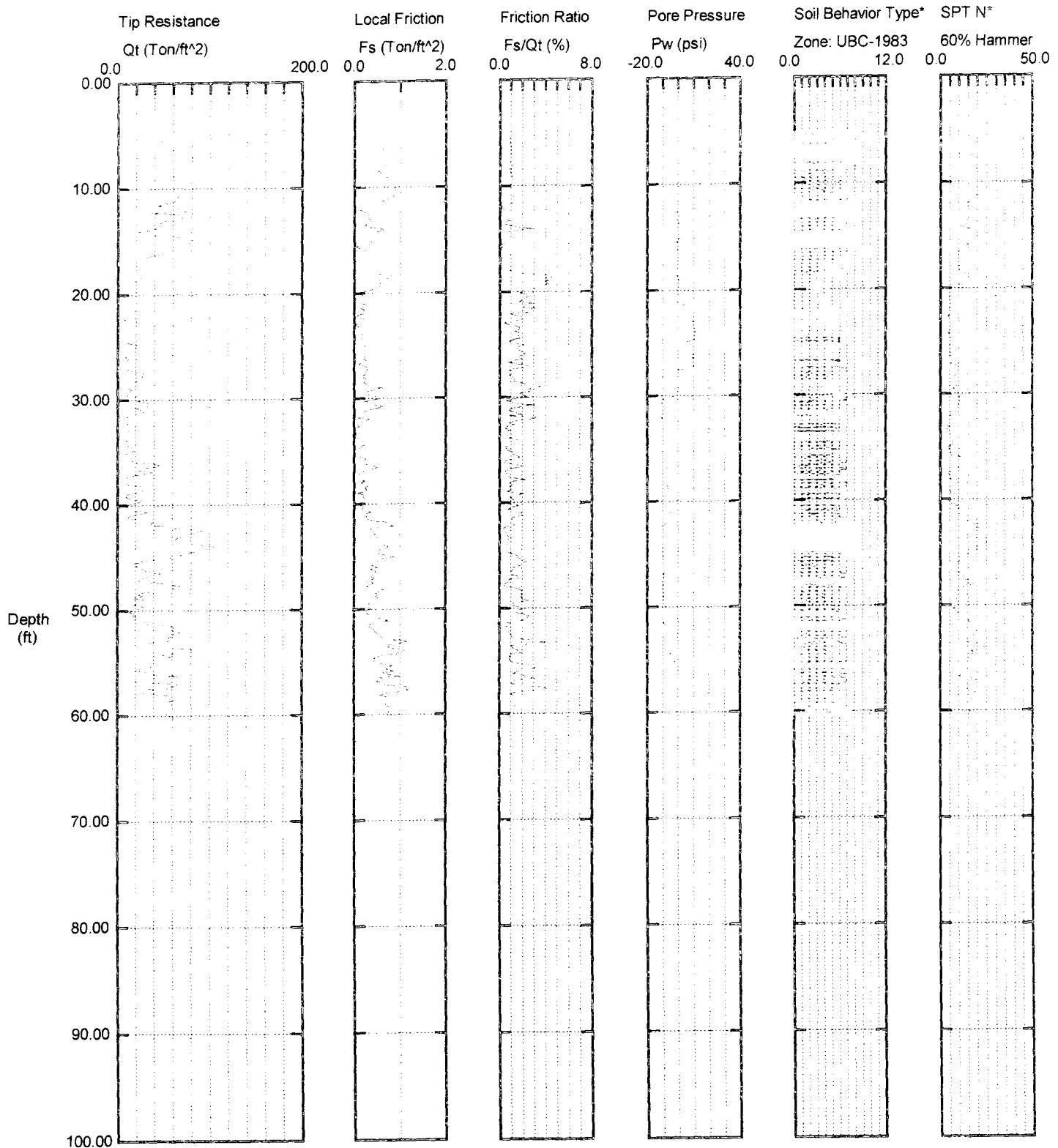
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-21 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG38
Cone Used: 4CH

CPT Date/Time: 07-09-02 09:29
Location: P111-21
Job Number: LANDAU/231009.31



Maximum Depth = 60.53 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

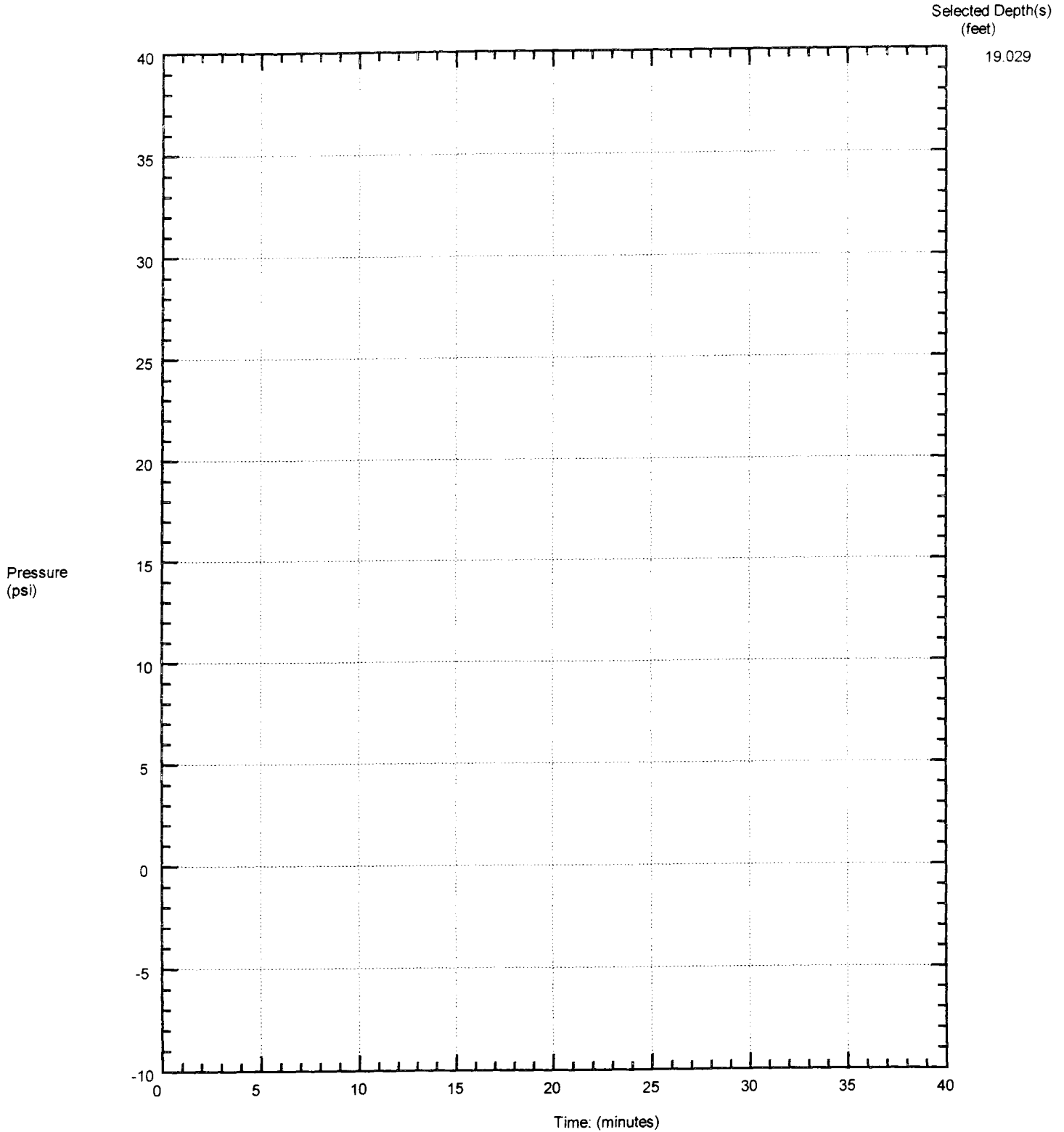
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-21 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG38
Cone Used: 4CH

CPT Date/Time: 07-09-02 09:29
Location: P111-21
Job Number: LANDAU/231009.31

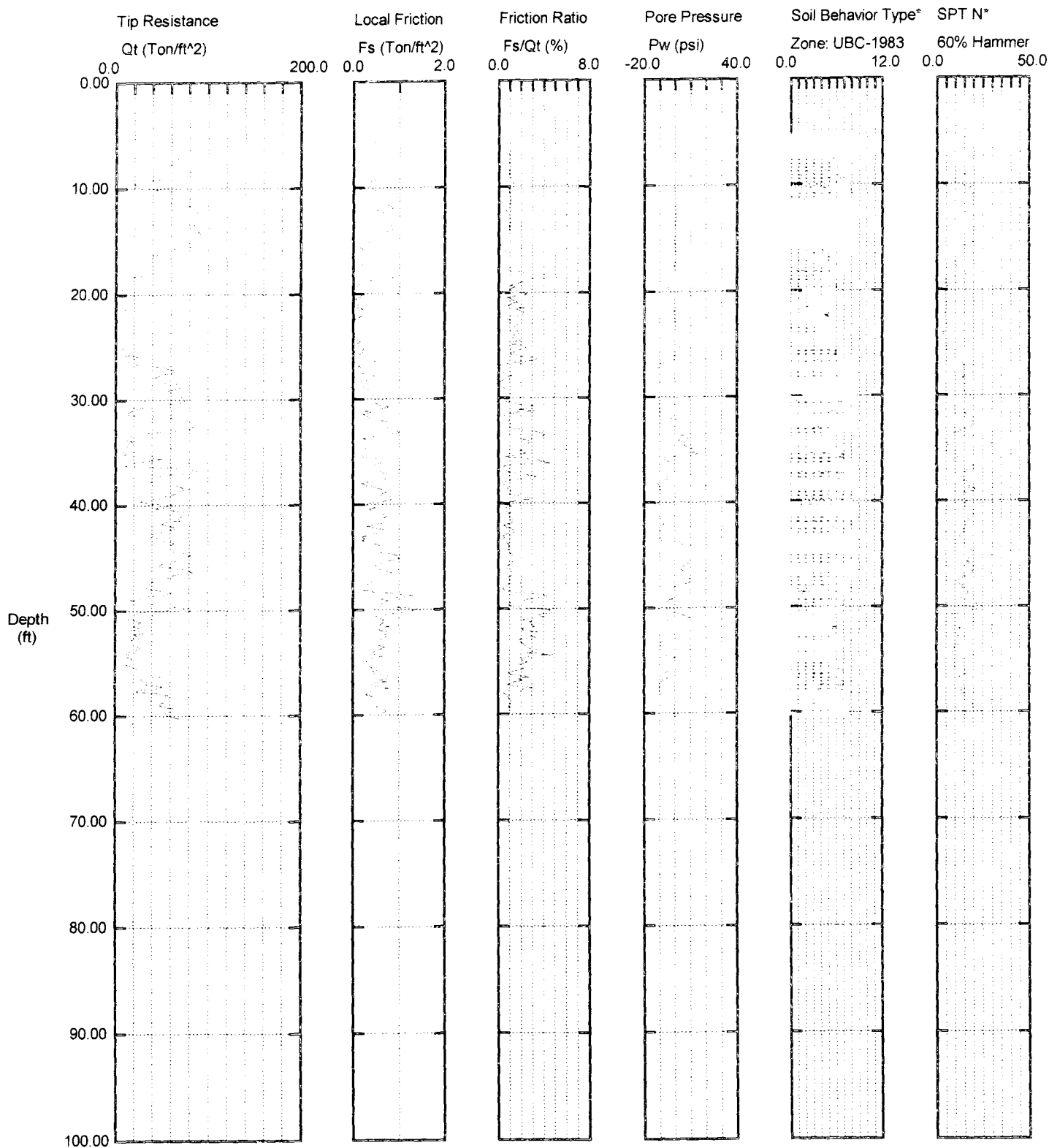


Maximum Pressure = 1.495 psi
Hydrostatic Pressure

LANDAU / P111-22 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG63
Cone Used: 4CH

CPT Date/Time: 07-16-02 06:52
Location: P111-22 NW TERMI
Job Number: LANDAU/231009.31



Maximum Depth = 60.37 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-22 / NW TERMINAL

Operator KDV/SVAN/GEOTECH

Sounding: FILG63

Cone Used: 4CH

CPT Date/Time: 07-16-02 06:52

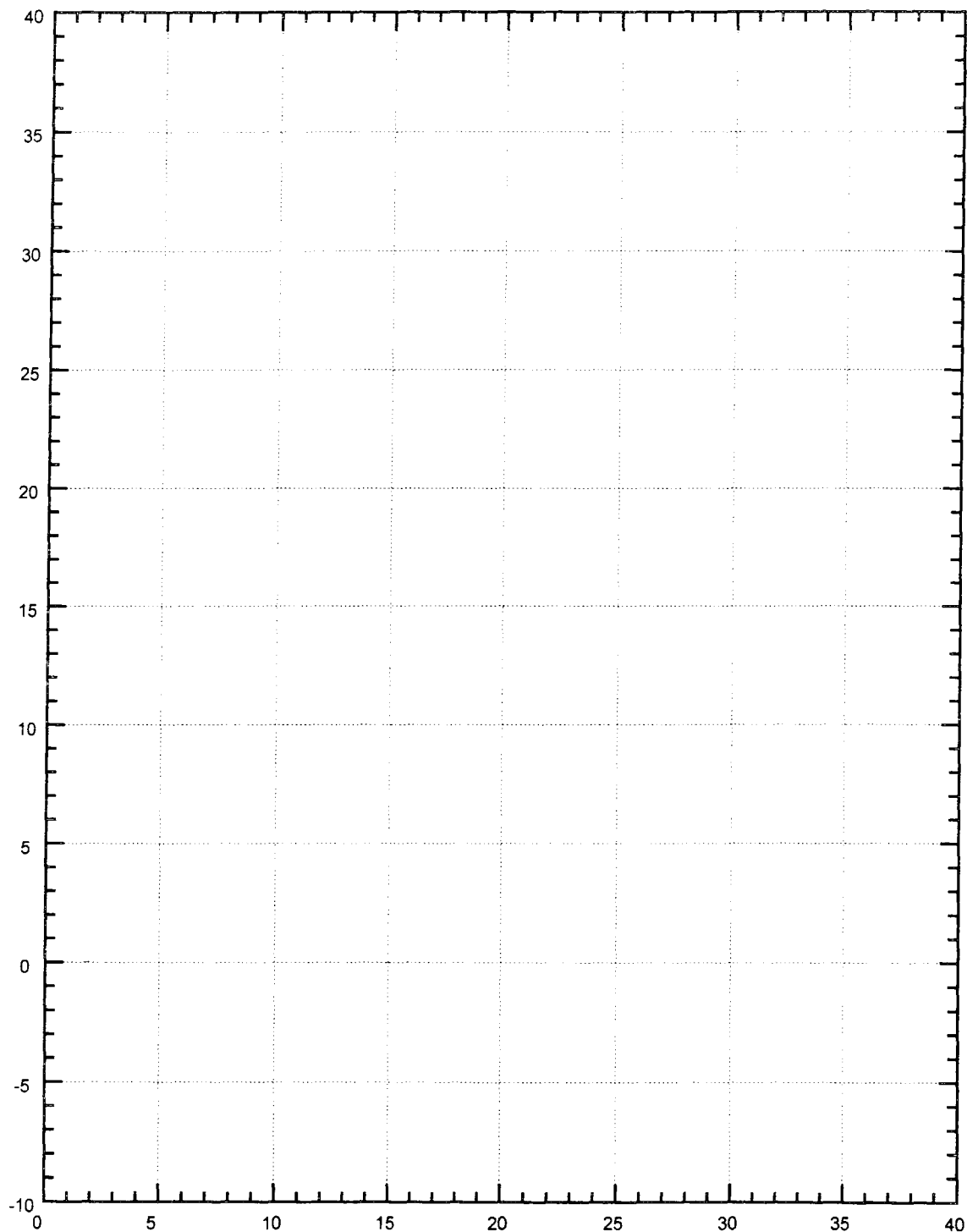
Location: P111-22 NW TERMI

Job Number: LANDAU/231009.31

Selected Depth(s)
(feet)

17.552

Pressure
(psi)



Time: (minutes)

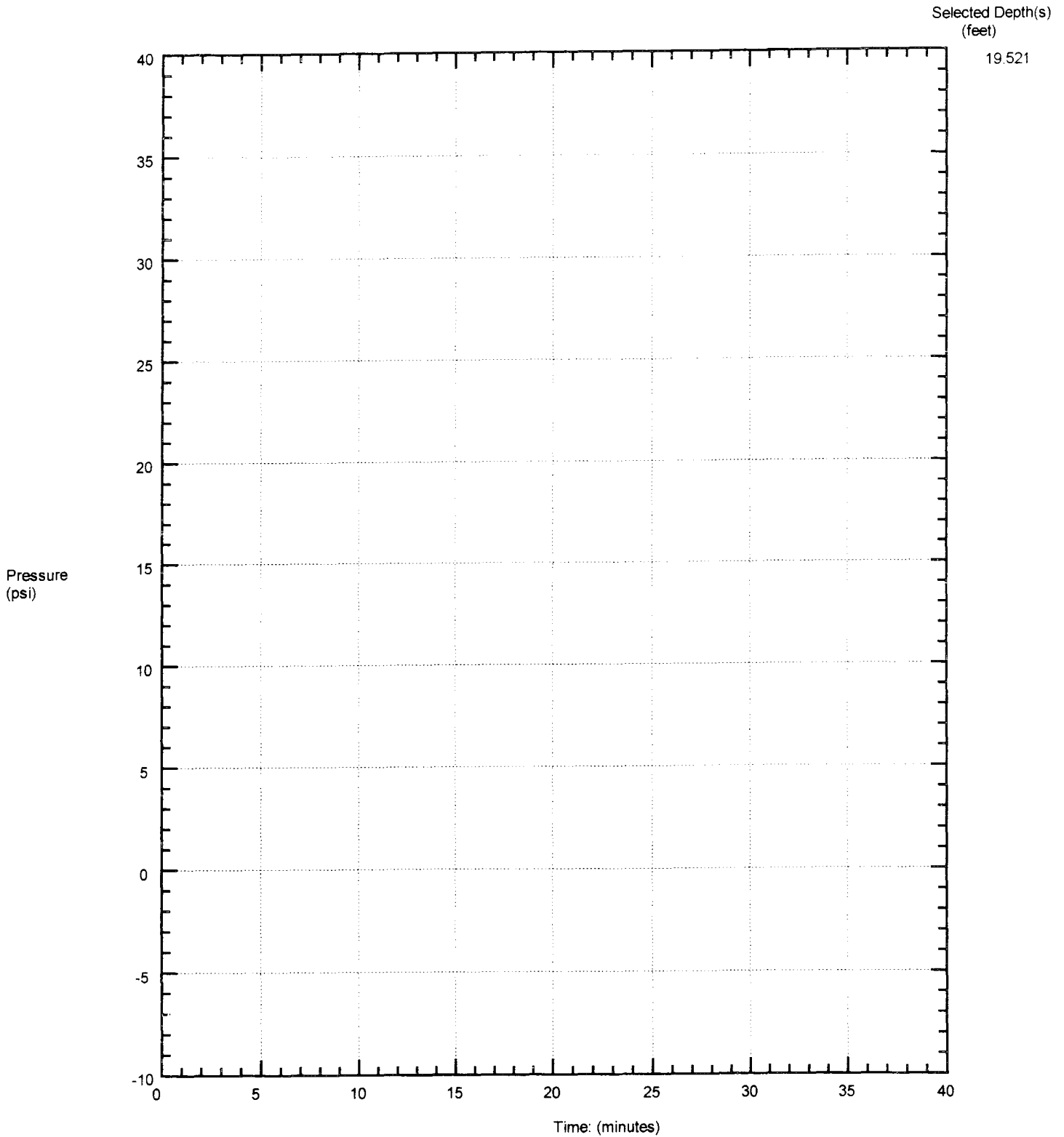
Maximum Pressure = 1.099 psi

Hydrostatic Pressure

LANDAU / P111-22 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG63
Cone Used: 4CH

CPT Date/Time: 07-16-02 06:52
Location: P111-22 NW TERMINAL
Job Number: LANDAU/231009.31

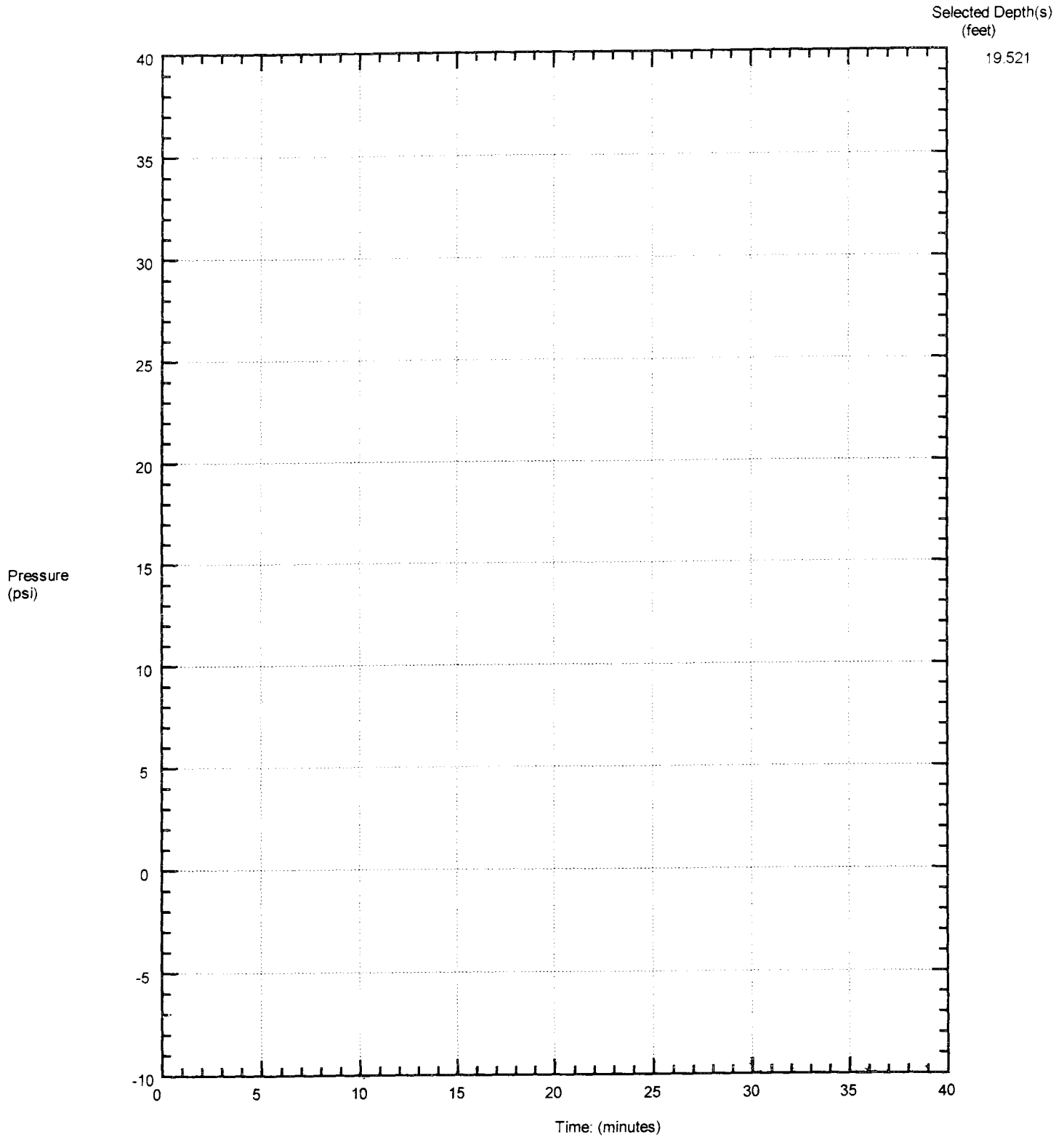


Maximum Pressure = -5.849 psi
Hydrostatic Pressure

LANDAU / P111-22 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG63
Cone Used: 4CH

CPT Date/Time: 07-16-02 06:52
Location: P111-22 NW TERMI
Job Number: LANDAU/231009.31

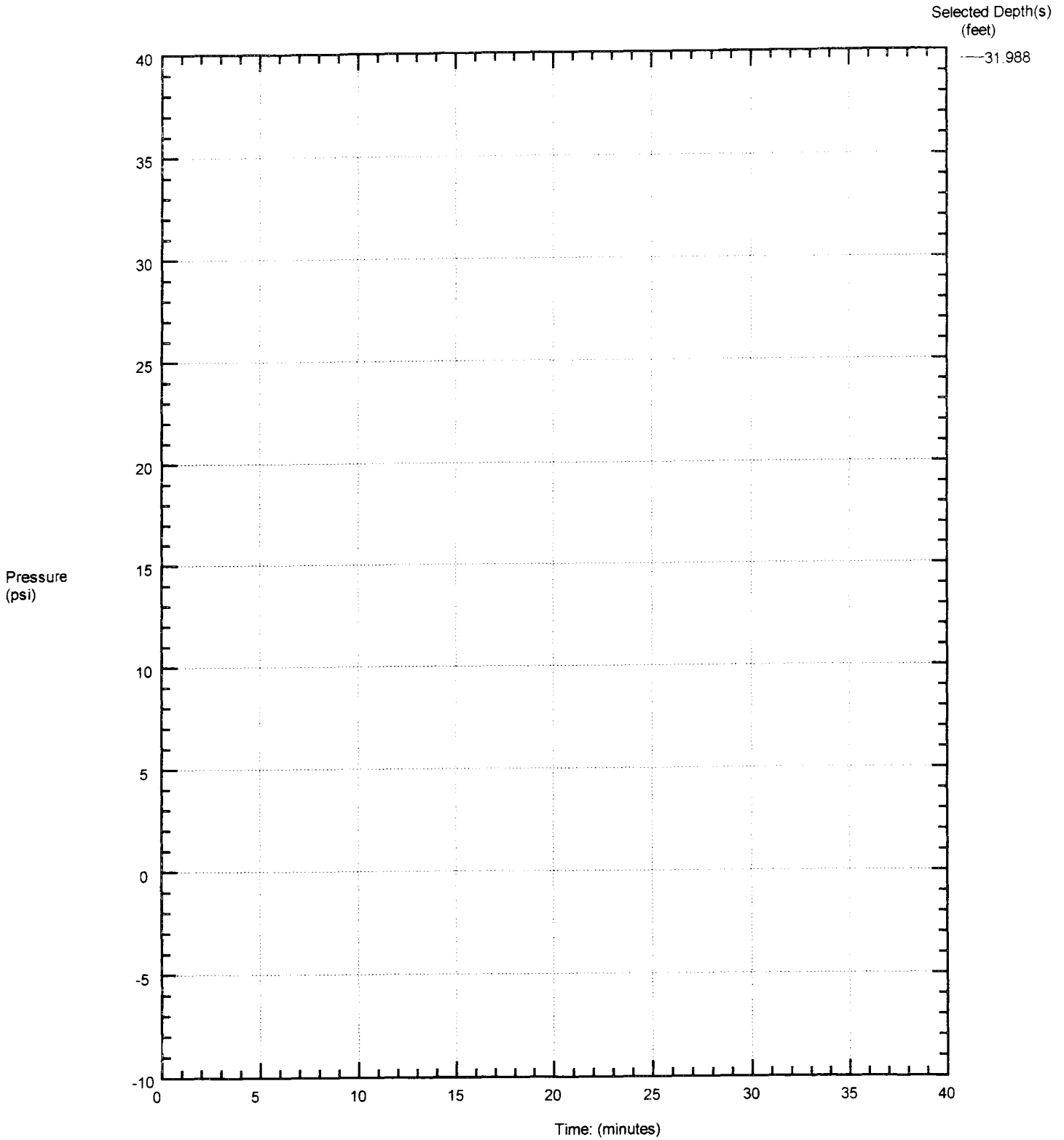


Maximum Pressure = -5.849 psi
Hydrostatic Pressure

LANDAU / P111-22 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG63
Cone Used: 4CH

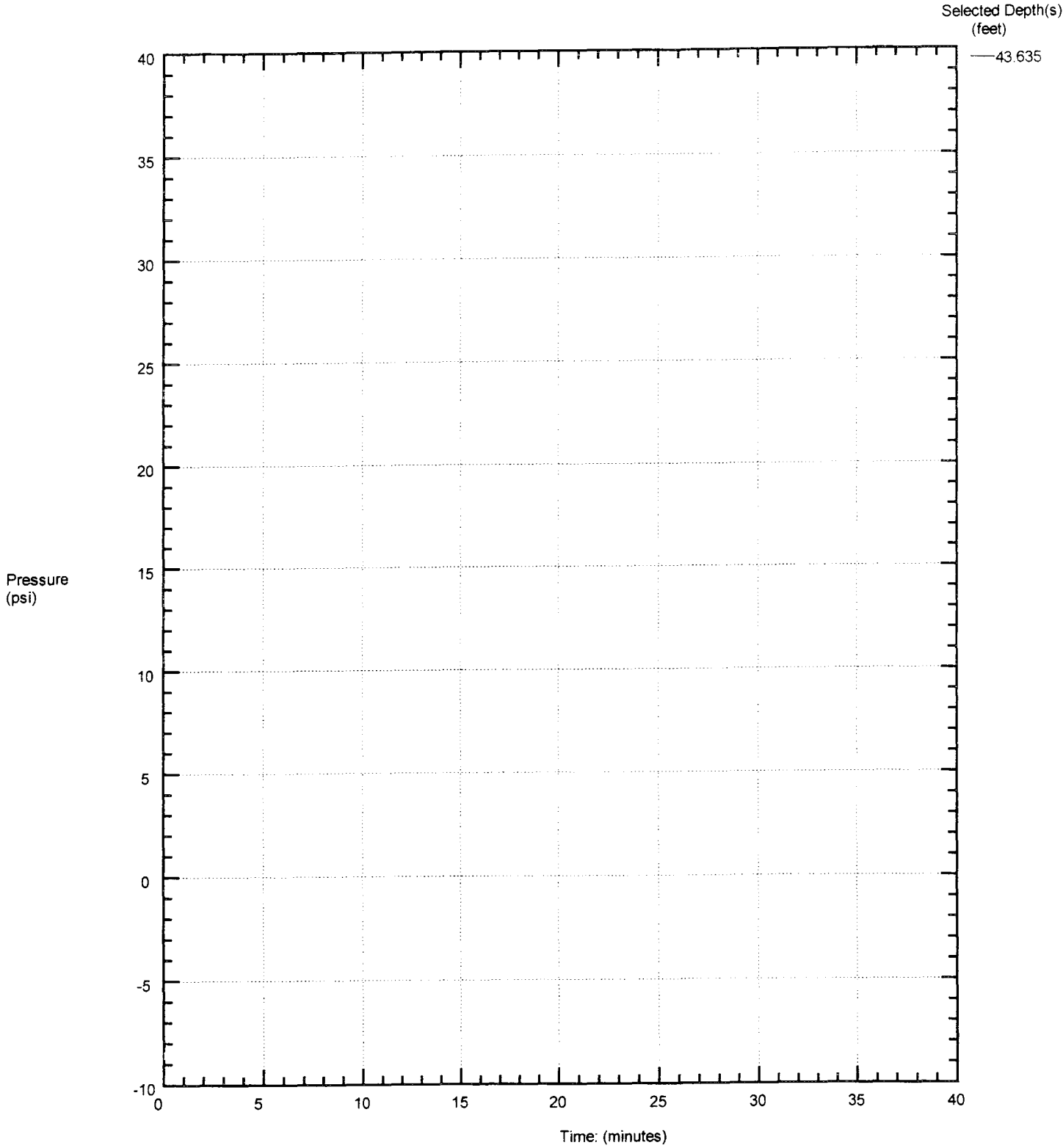
CPT Date/Time: 07-16-02 06:52
Location: P111-22 NW TERMI
Job Number: LANDAU/231009.31



LANDAU / P111-22 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG63
Cone Used: 4CH

CPT Date/Time: 07-16-02 06:52
Location: P111-22 NW TERMI
Job Number: LANDAU/231009.31



Maximum Pressure = 7.924 psi
Hydrostatic Pressure

LANDAU / P111-22 / NW TERMINAL

Operator KDV/SVAN/GEOTECH

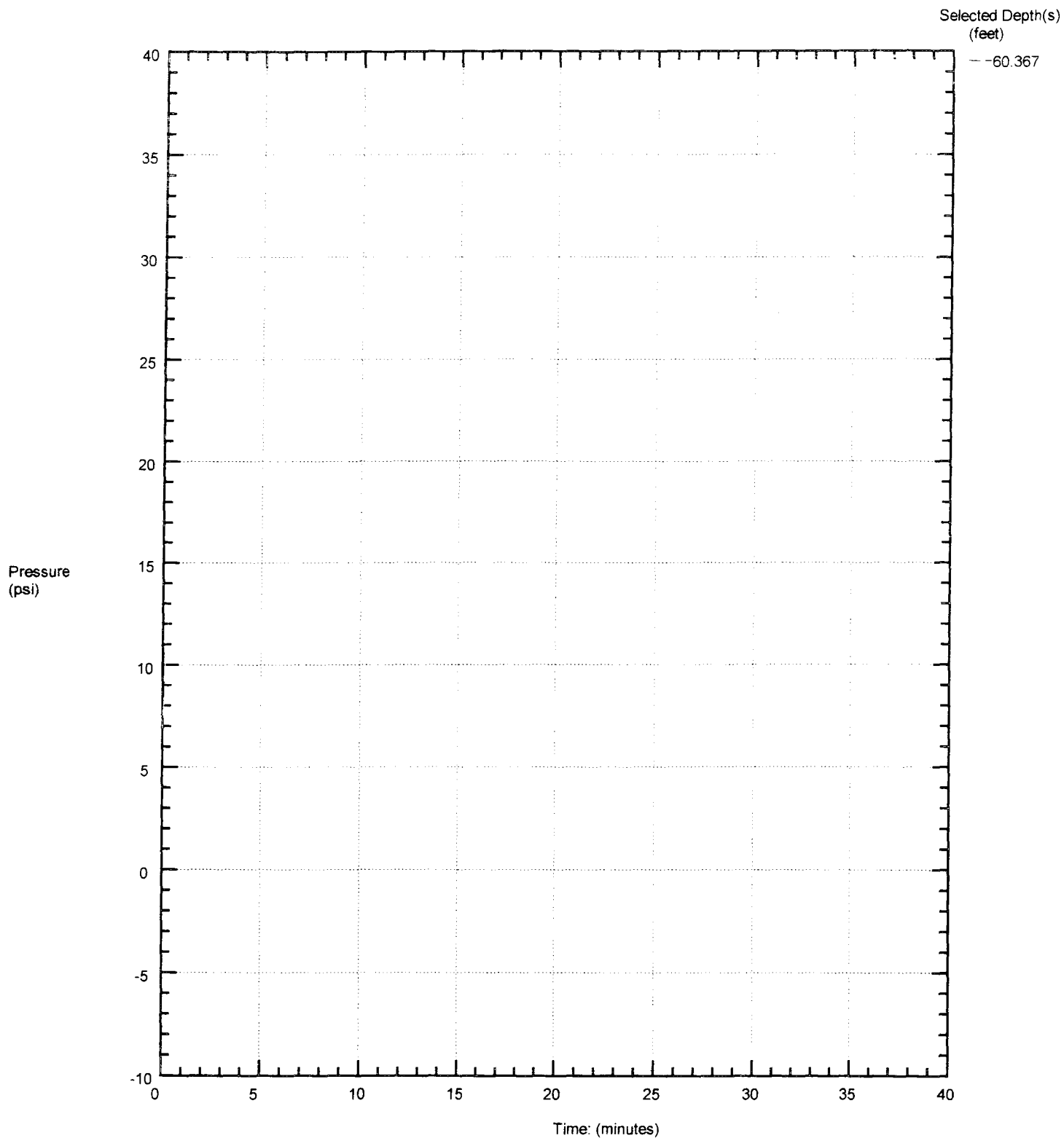
Sounding: FILG63

Cone Used: 4CH

CPT Date/Time: 07-16-02 06:52

Location: P111-22 NW TERMI

Job Number: LANDAU/231009 31



Maximum Pressure = 15.32 psi

Hydrostatic Pressure

LANDAU / P111-23 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH

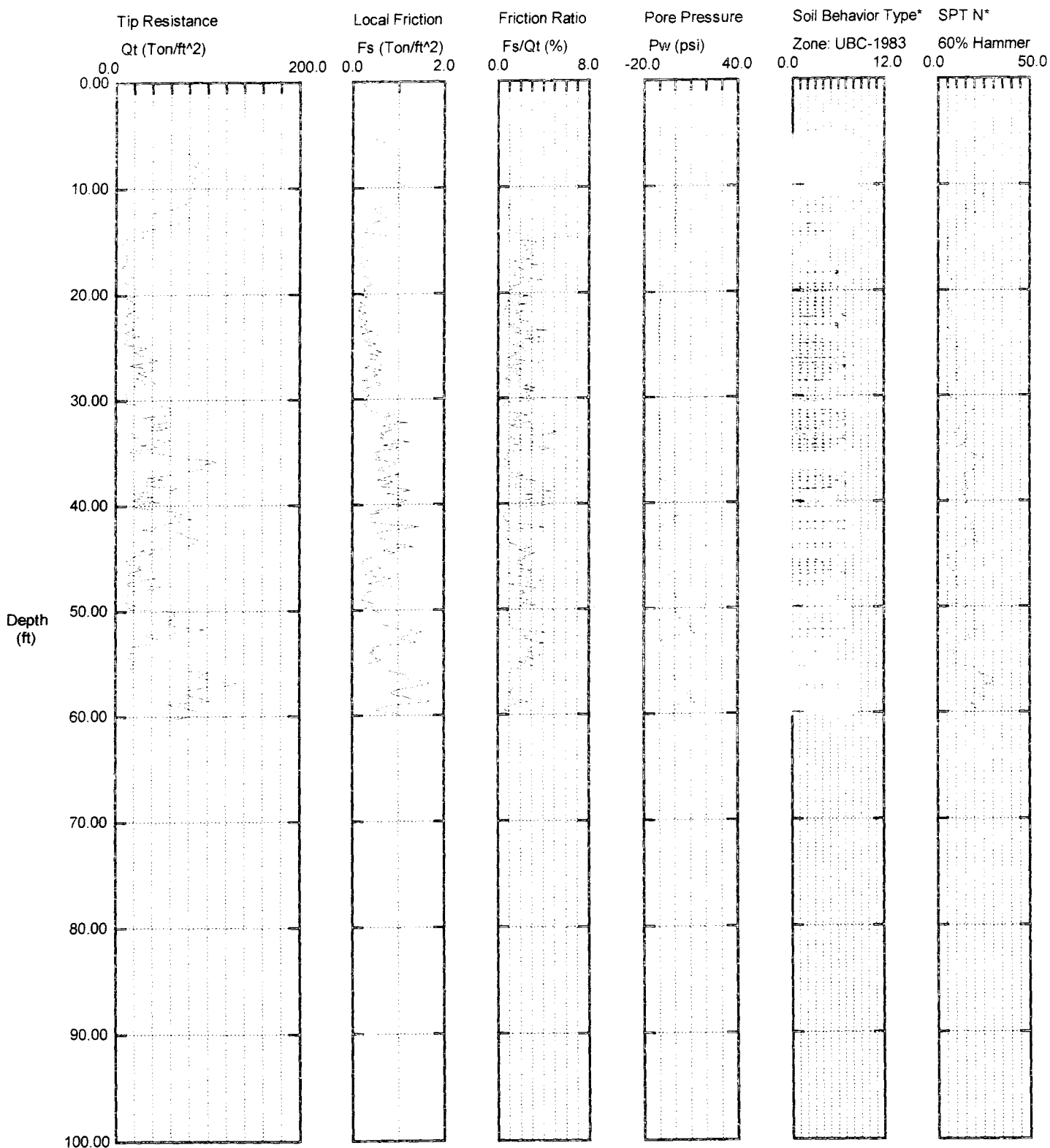
Sounding: FILG30

Cone Used: 4CH

CPT Date/Time: 07-08-02 14:10

Location: P111-23 NW TERMI

Job Number: LANDAU/231009.31



1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

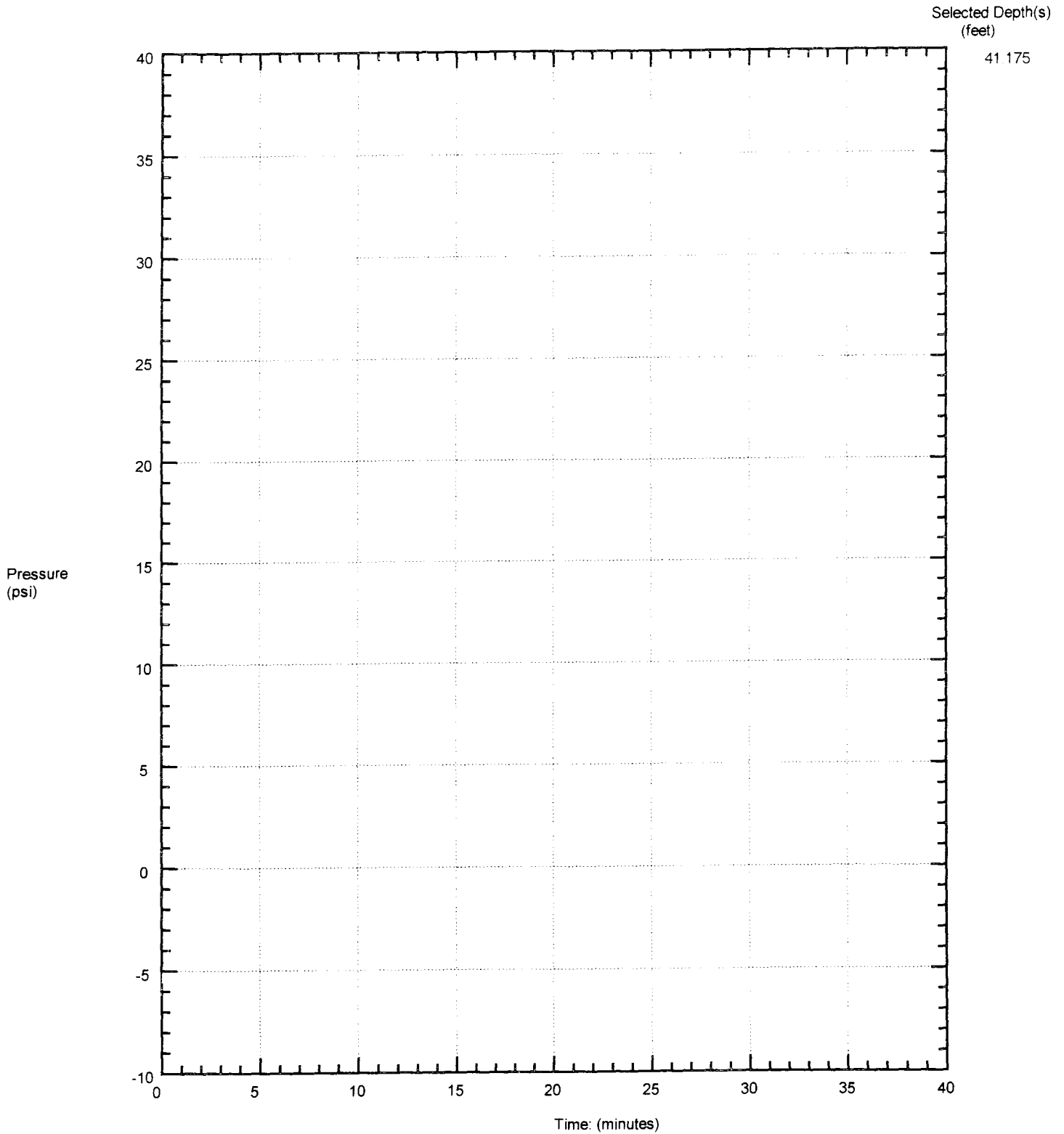
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-23 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG30
Cone Used: 4CH

CPT Date/Time: 07-08-02 14:10
Location: P111-23 NW TERMI
Job Number: LANDAU/231009.31

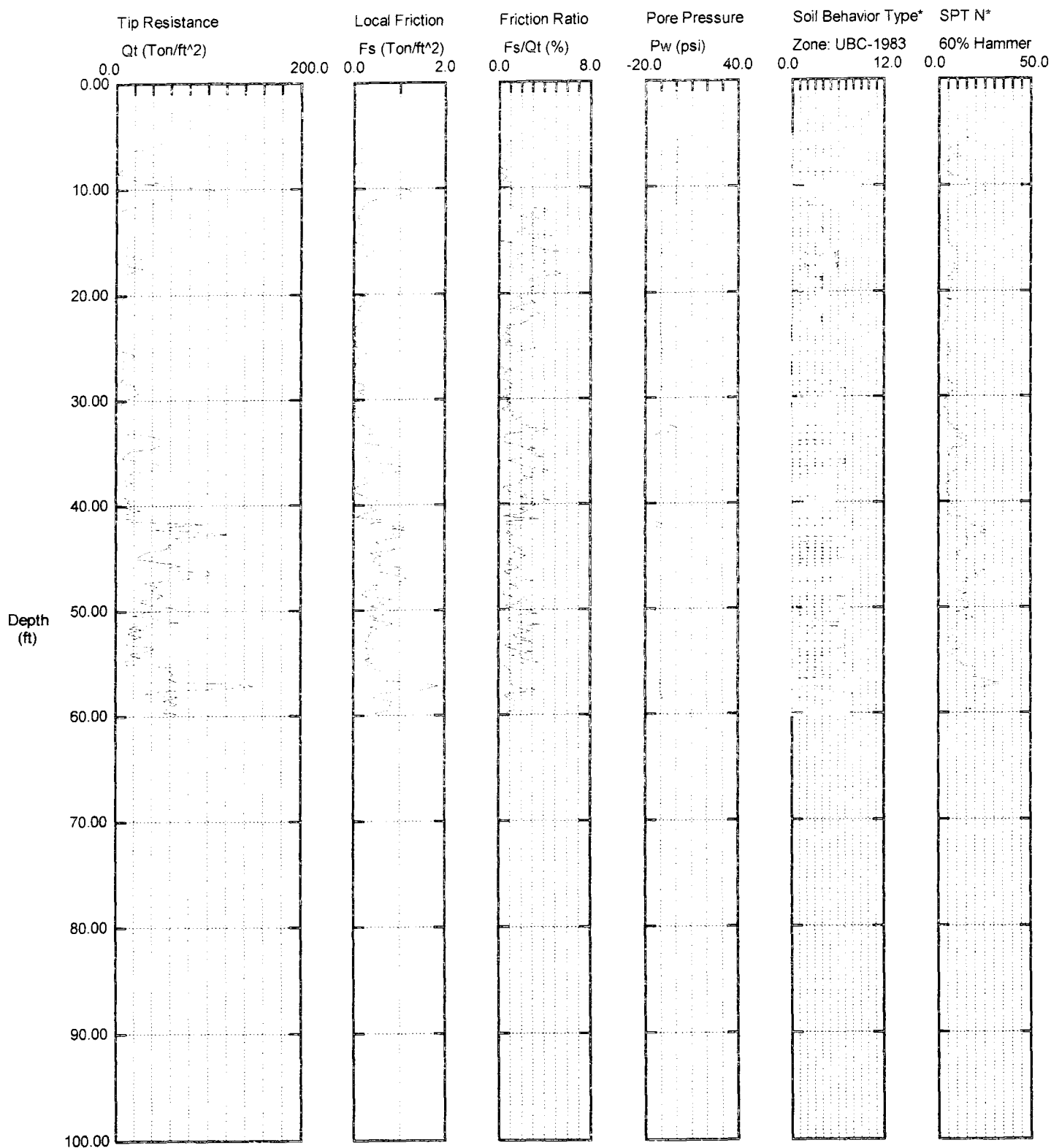


Maximum Pressure = 7.019 psi
Hydrostatic Pressure

LANDAU / P111-24 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG41
Cone Used: 4CH

CPT Date/Time: 07-09-02 14:44
Location: P111-24 NW TERMI
Job Number: LANDAU/231009.31



Maximum Depth = 60.37 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

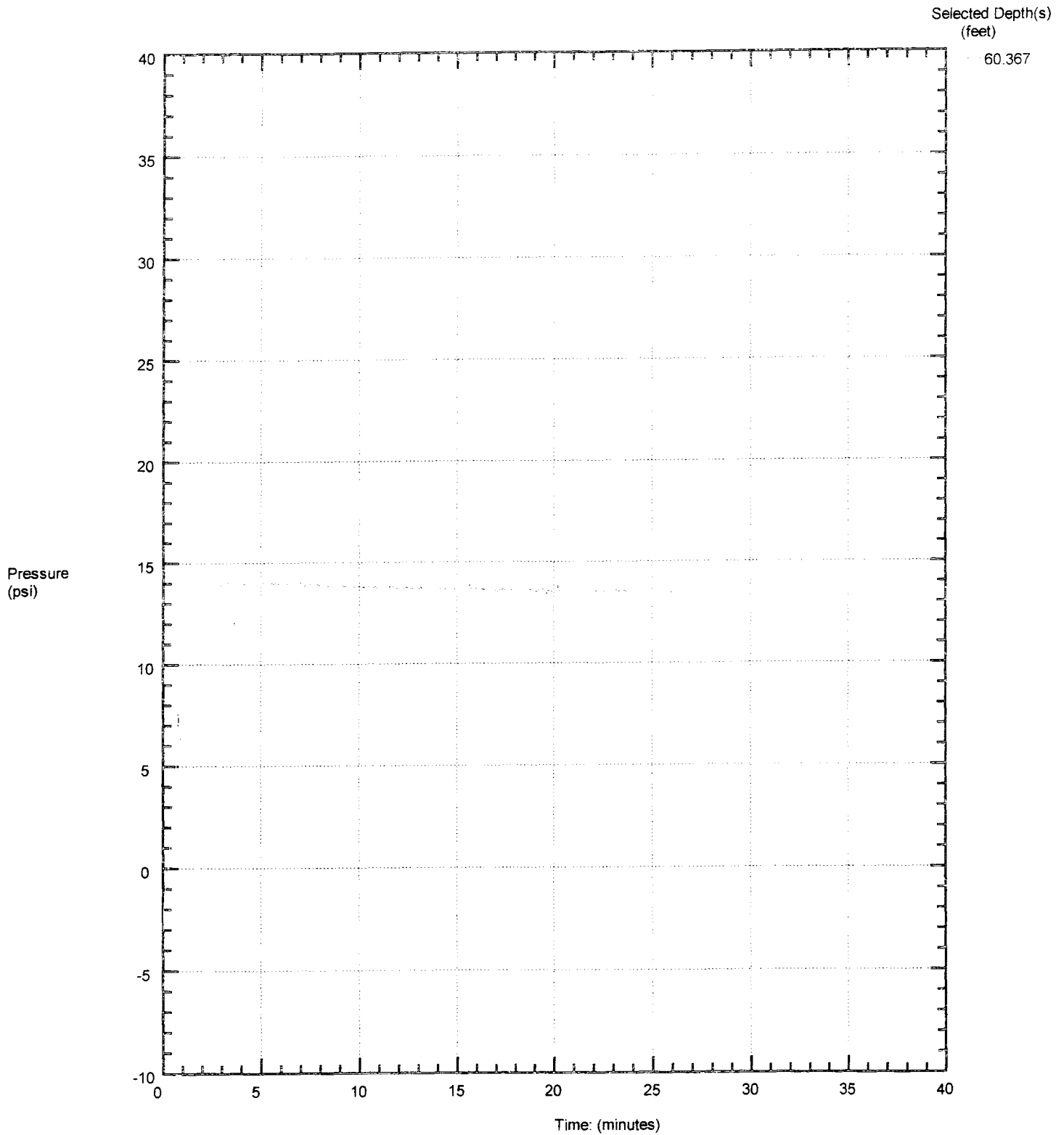
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-24 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG41
Cone Used: 4CH

CPT Date/Time: 07-09-02 14:44
Location: P111-24 NW TERMI
Job Number: LANDAU/231009.31

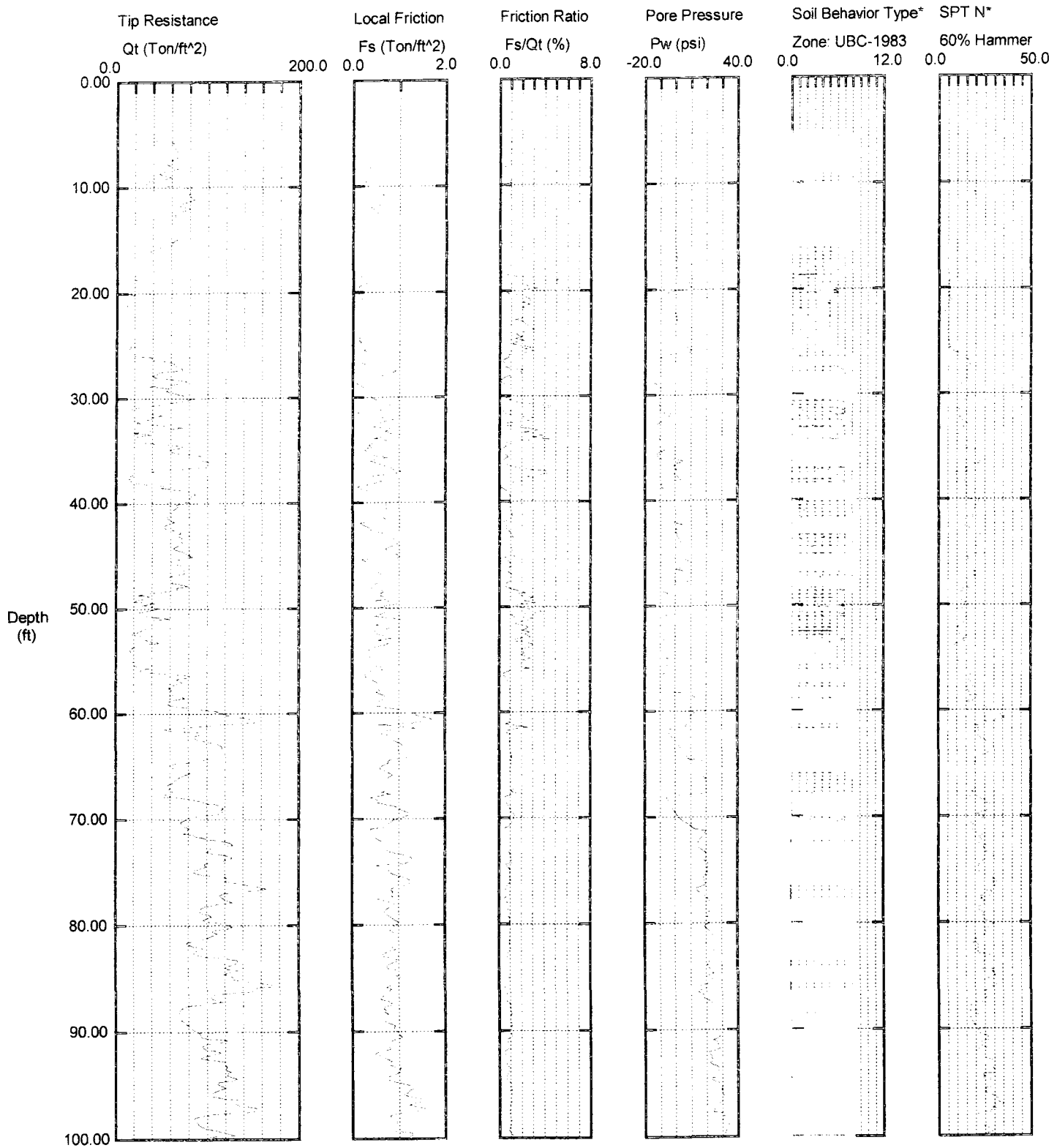


Maximum Pressure = 14.089 psi
Hydrostatic Pressure

LANDAU / P111-25 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG27
Cone Used: 4CH

CPT Date/Time: 07-08-02 08:57
Location: P111-25 NW TERMI
Job Number: LANDAU/231009.31



Maximum Depth = 100.39 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

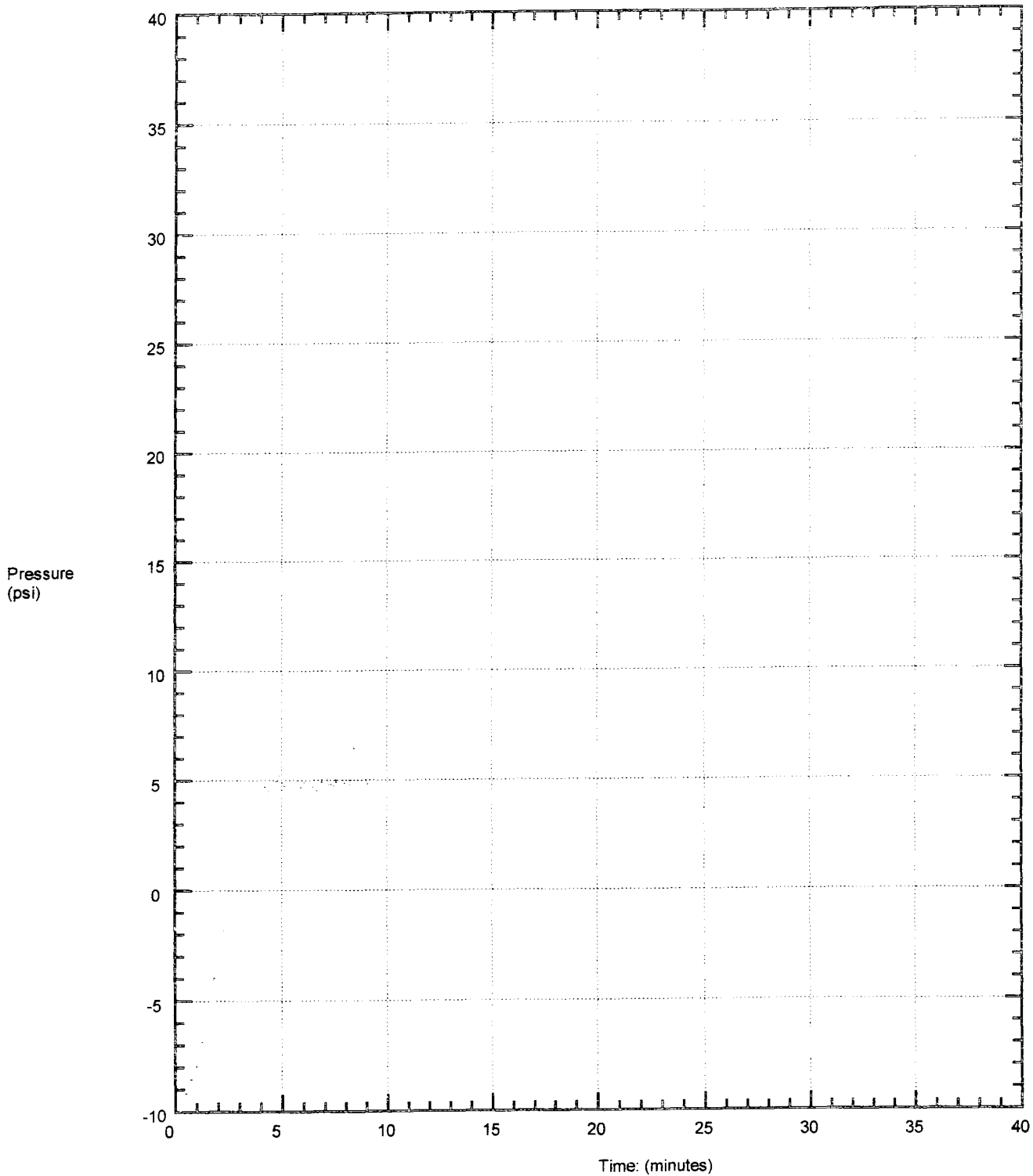
LANDAU / P111-25 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG27
Cone Used: 4CH

CPT Date/Time: 07-08-02 08:57
Location: P111-25 NW TERMINI
Job Number: LANDAU/231009.31

Selected Depth(s)
(feet)

36.089



Maximum Pressure = 6.622 psi
Hydrostatic Pressure

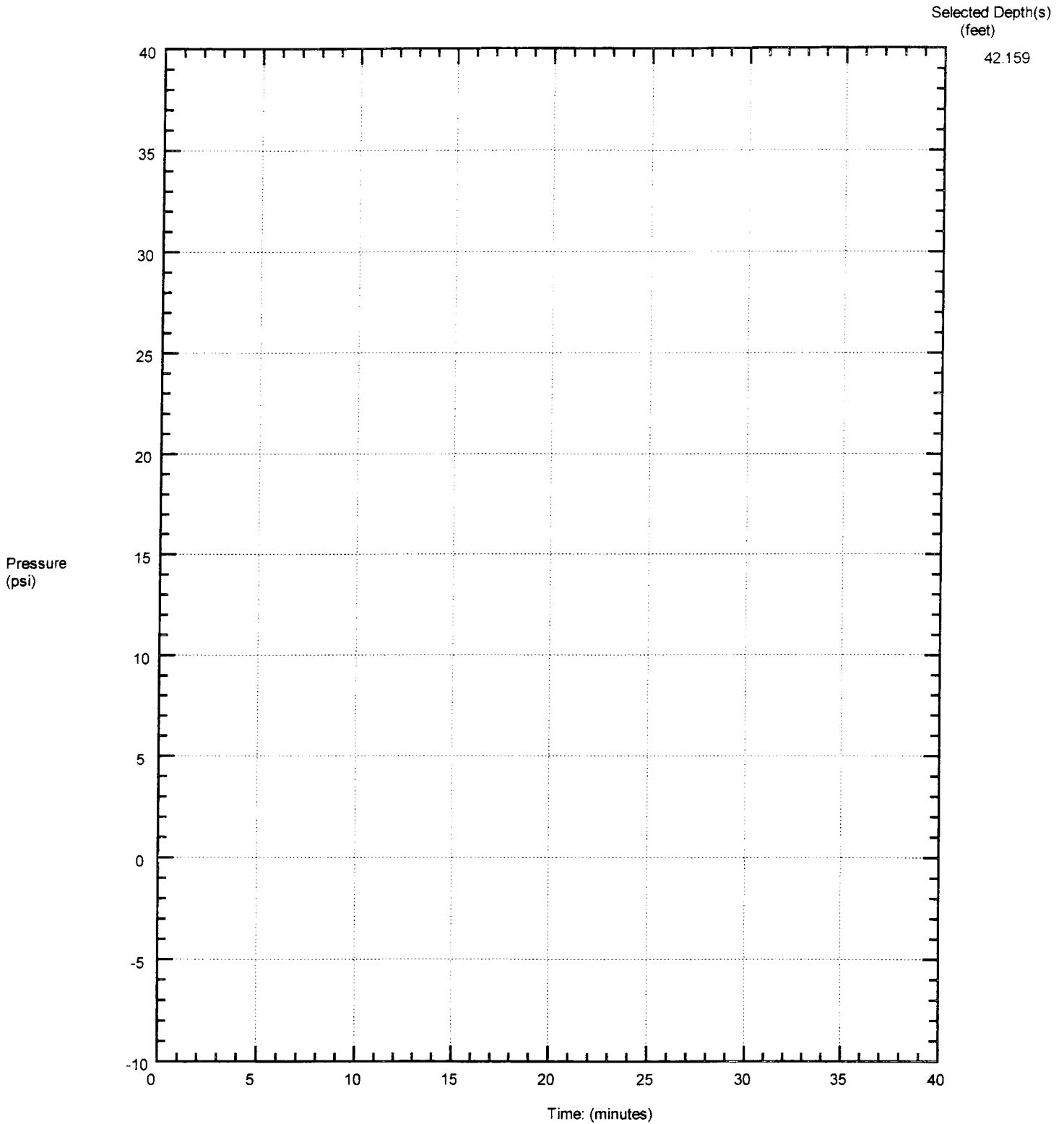
Depth = 36.089
PSI = +6.622
32.711

WL = 36' ?

LANDAU / P111-25 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG27
Cone Used: 4CH

CPT Date/Time: 07-08-02 08:57
Location: P111-25 NW TERMI
Job Number: LANDAU/231009.31

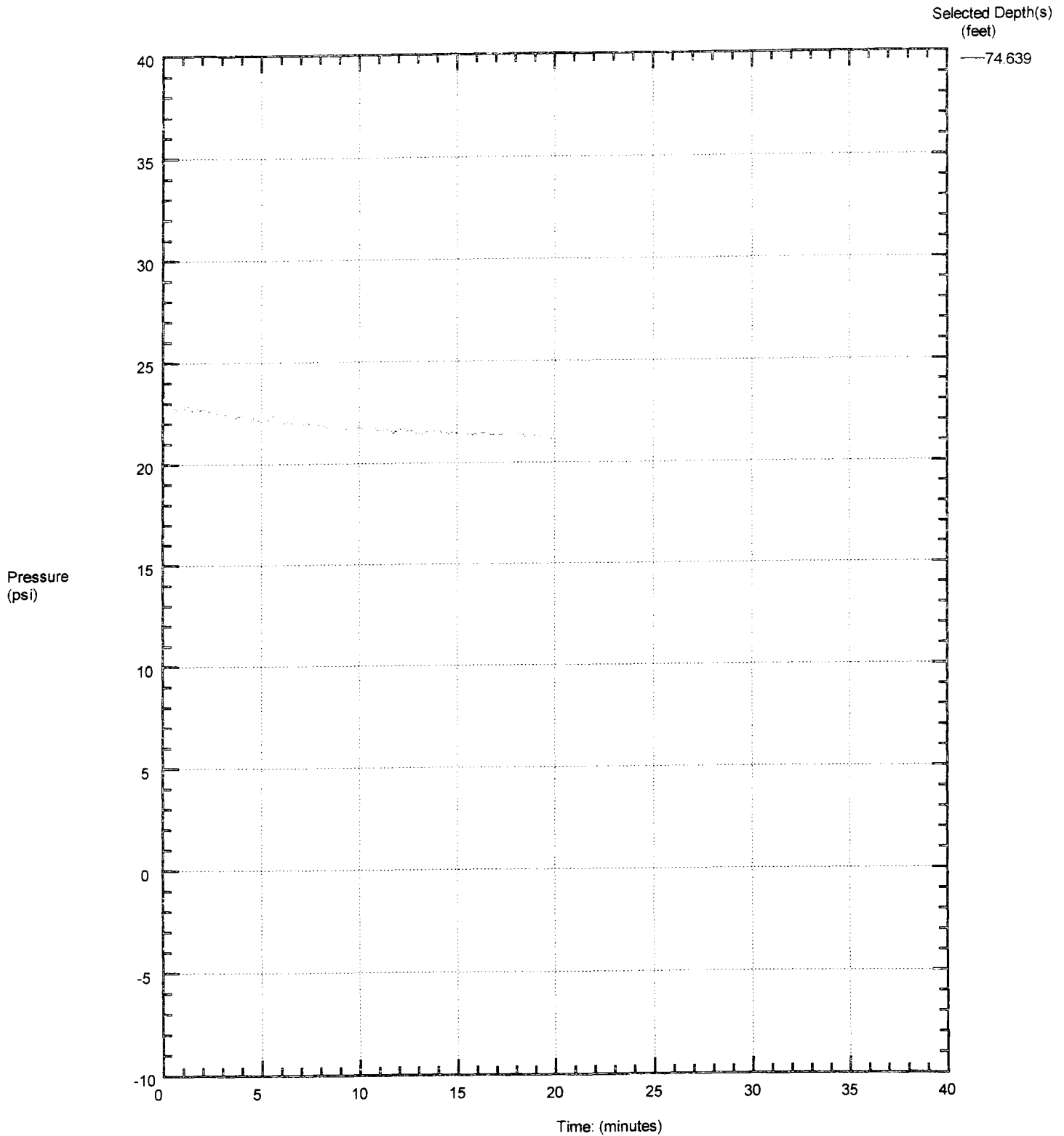


Maximum Pressure = 7.833 psi
Hydrostatic Pressure

LANDAU / P111-25 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG27
Cone Used: 4CH

CPT Date/Time: 07-08-02 08:57
Location: P111-25 NW TERMI
Job Number: LANDAU/231009.31

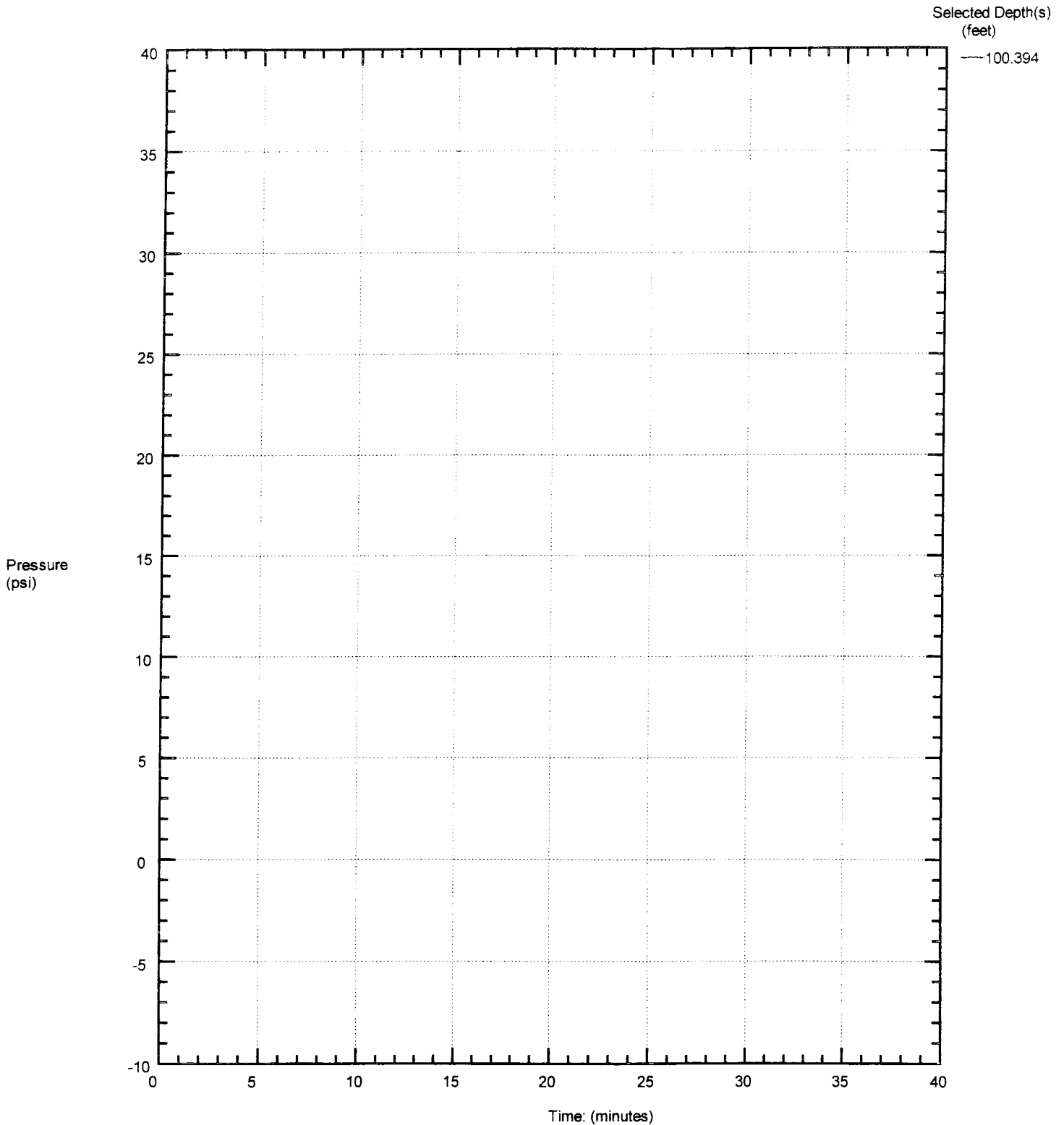


Maximum Pressure = 23.722 psi
Hydrostatic Pressure -

LANDAU / P111-25 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG27
Cone Used: 4CH

CPT Date/Time: 07-08-02 08:57
Location: P111-25 NW TERMI
Job Number: LANDAU/231009.31

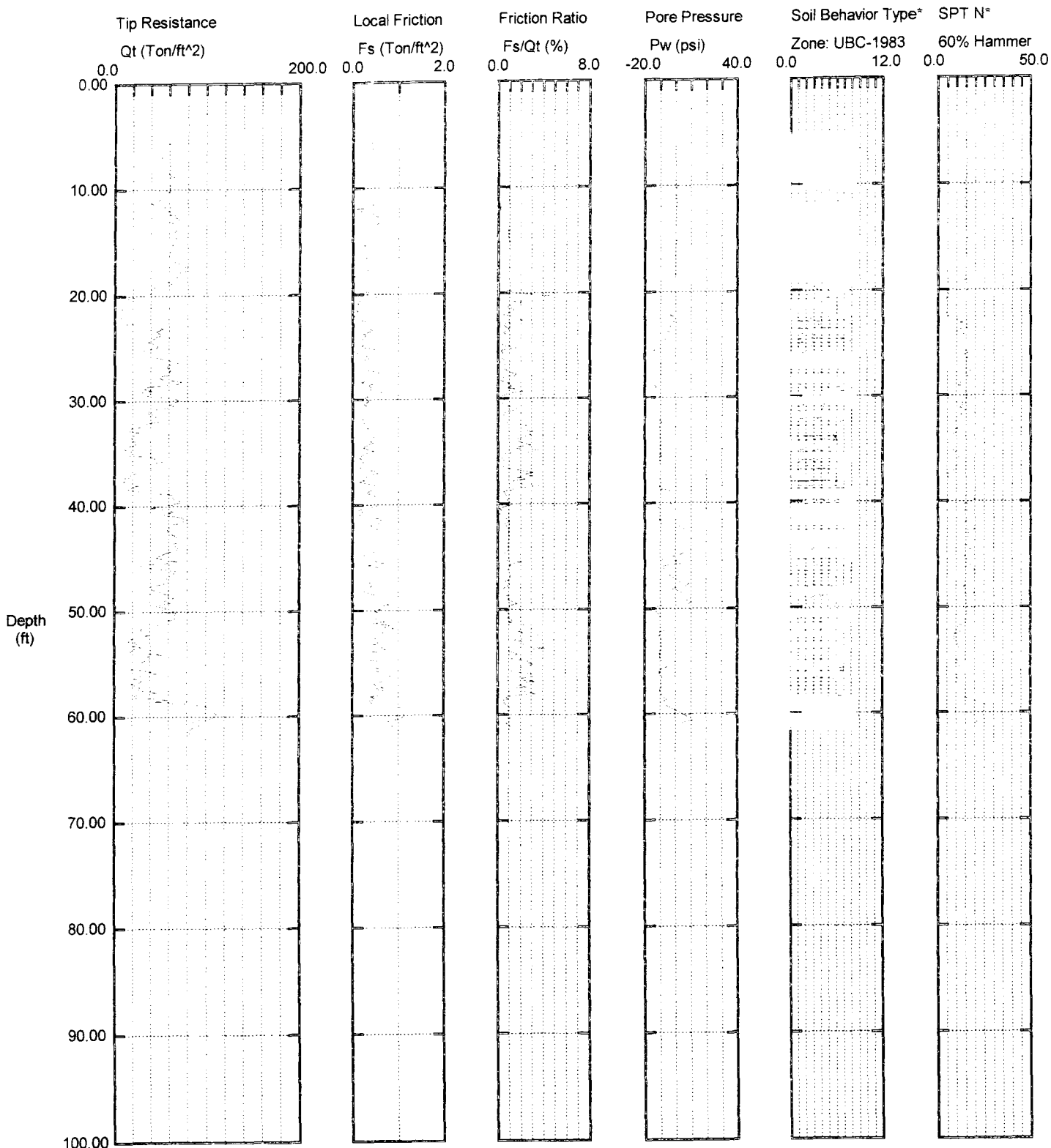


Maximum Pressure = 34.607 psi
Hydrostatic Pressure

LANDAU / P111-26 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG61
Cone Used: 4CH

CPT Date/Time: 07-15-02 12:12
Location: P111-26 NW TERMINAL
Job Number: LANDAU/231009.31



Maximum Depth = 61.68 feet

Depth Increment = 0.16 feet

1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

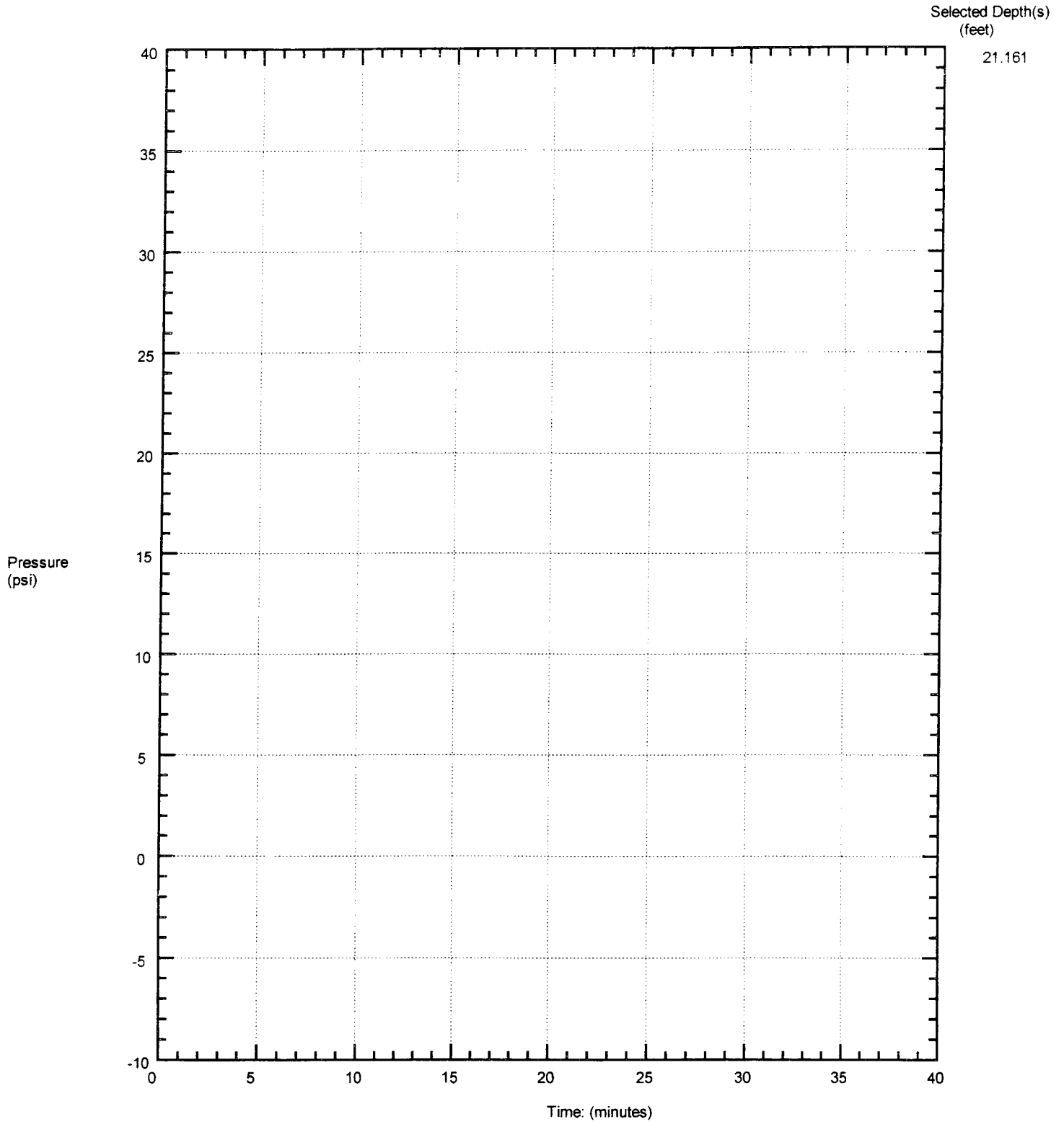
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-26 / NW TERMINAL

Operator KDV/SVAN/GEOTECH
Sounding: FILG61
Cone Used: 4CH

CPT Date/Time: 07-15-02 12:12
Location: P111-26 NW TERMI
Job Number: LANDAU/231009.31

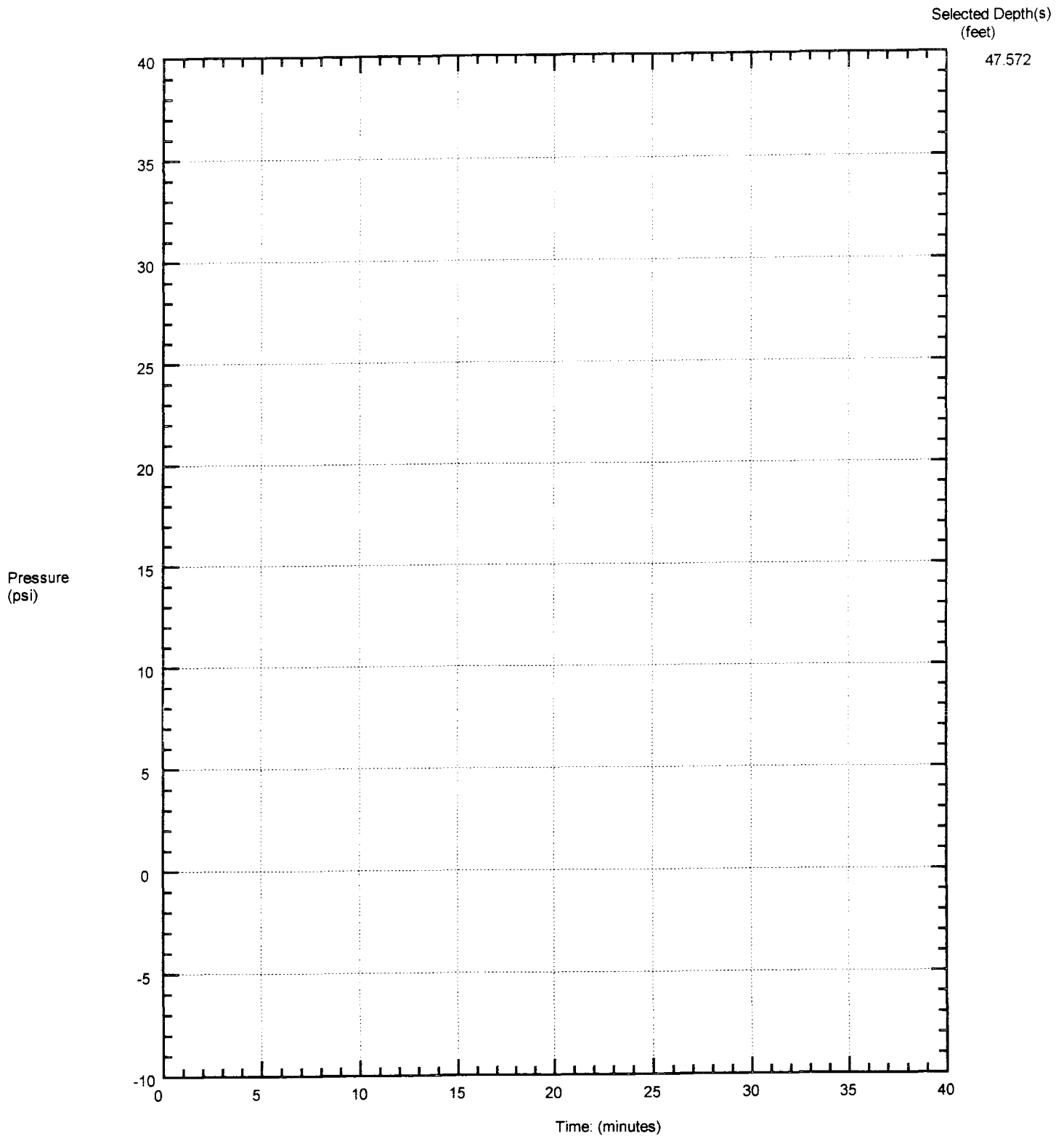


Maximum Pressure = 1.017 psi
Hydrostatic Pressure

LANDAU / P111-26 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG61
Cone Used: 4CH

CPT Date/Time: 07-15-02 12:12
Location: P111-26 NW TERM
Job Number: LANDAU/231009.31

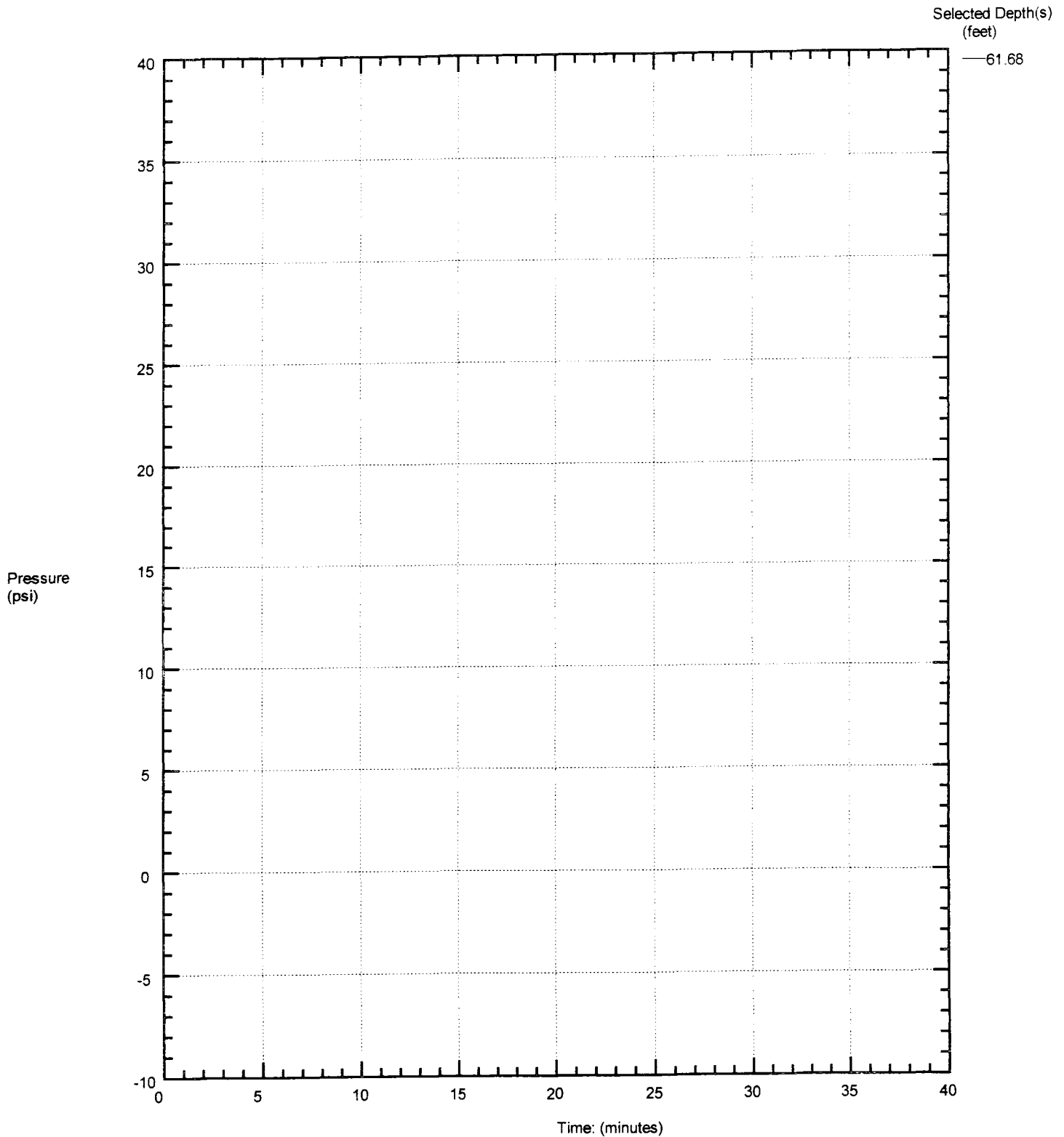


Maximum Pressure = 9.674 psi
Hydrostatic Pressure

LANDAU / P111-26 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG61
Cone Used: 4CH

CPT Date/Time: 07-15-02 12:12
Location: P111-26 NW TERMI
Job Number: LANDAU/231009.31

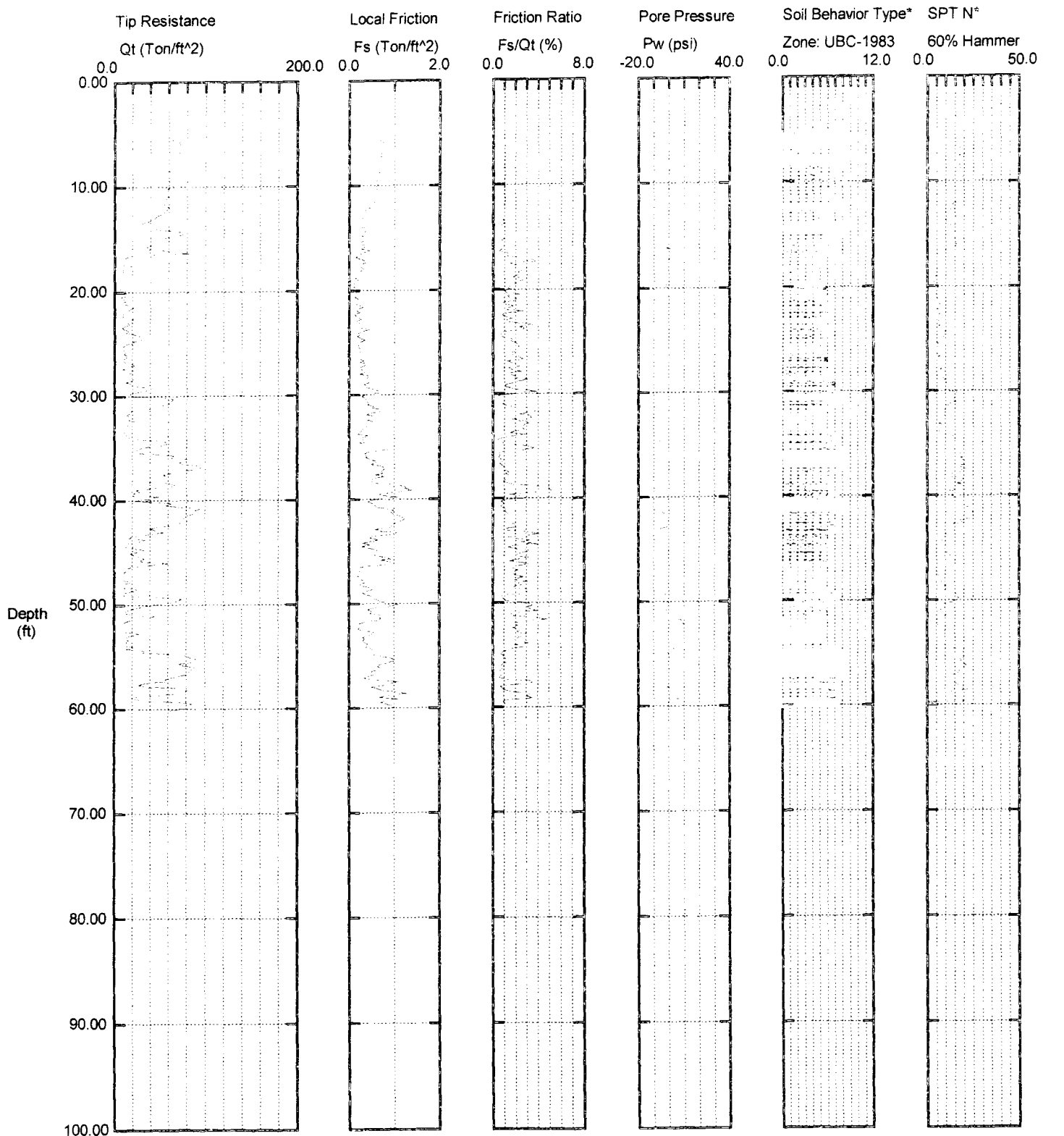


Maximum Pressure = 15.534 psi
Hydrostatic Pressure

LANDAU / P111-27 / NW TERMINAL

Operator: KDV/SVAN/GEOTECH
Sounding: FILG28
Cone Used: 4CH

CPT Date/Time: 07-08-02 12:04
Location: P111-27 NW TERMI
Job Number: LANDAU/231009.31



1 sensitive fine grained
2 organic material
3 clay

4 silty clay to clay
5 clayey silt to silty clay
6 sandy silt to clayey silt

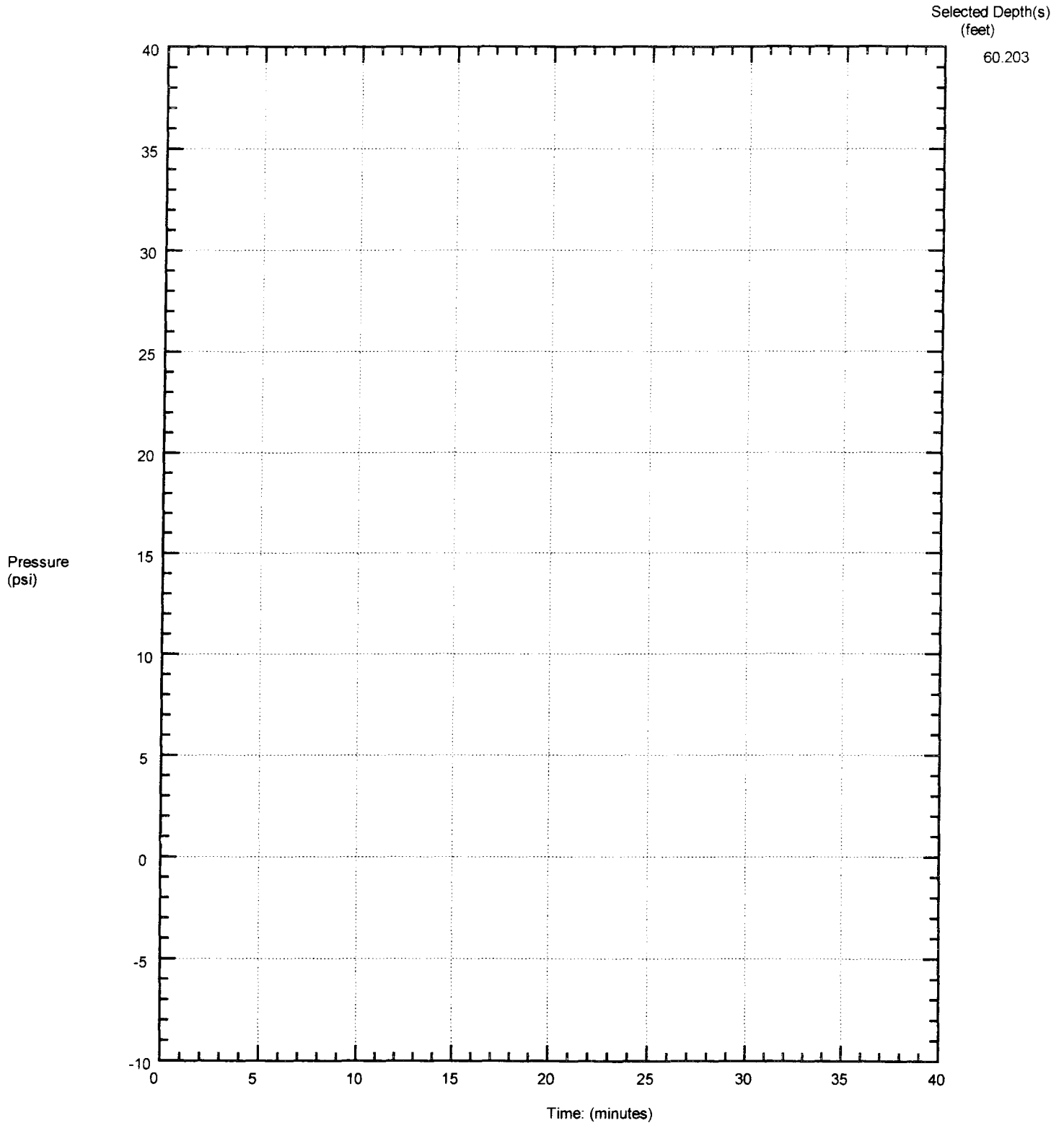
7 silty sand to sandy silt
8 sand to silty sand
9 sand

10 gravelly sand to sand
11 very stiff fine grained (*)
12 sand to clayey sand (*)

LANDAU / P111-27 / NW TERMINAL

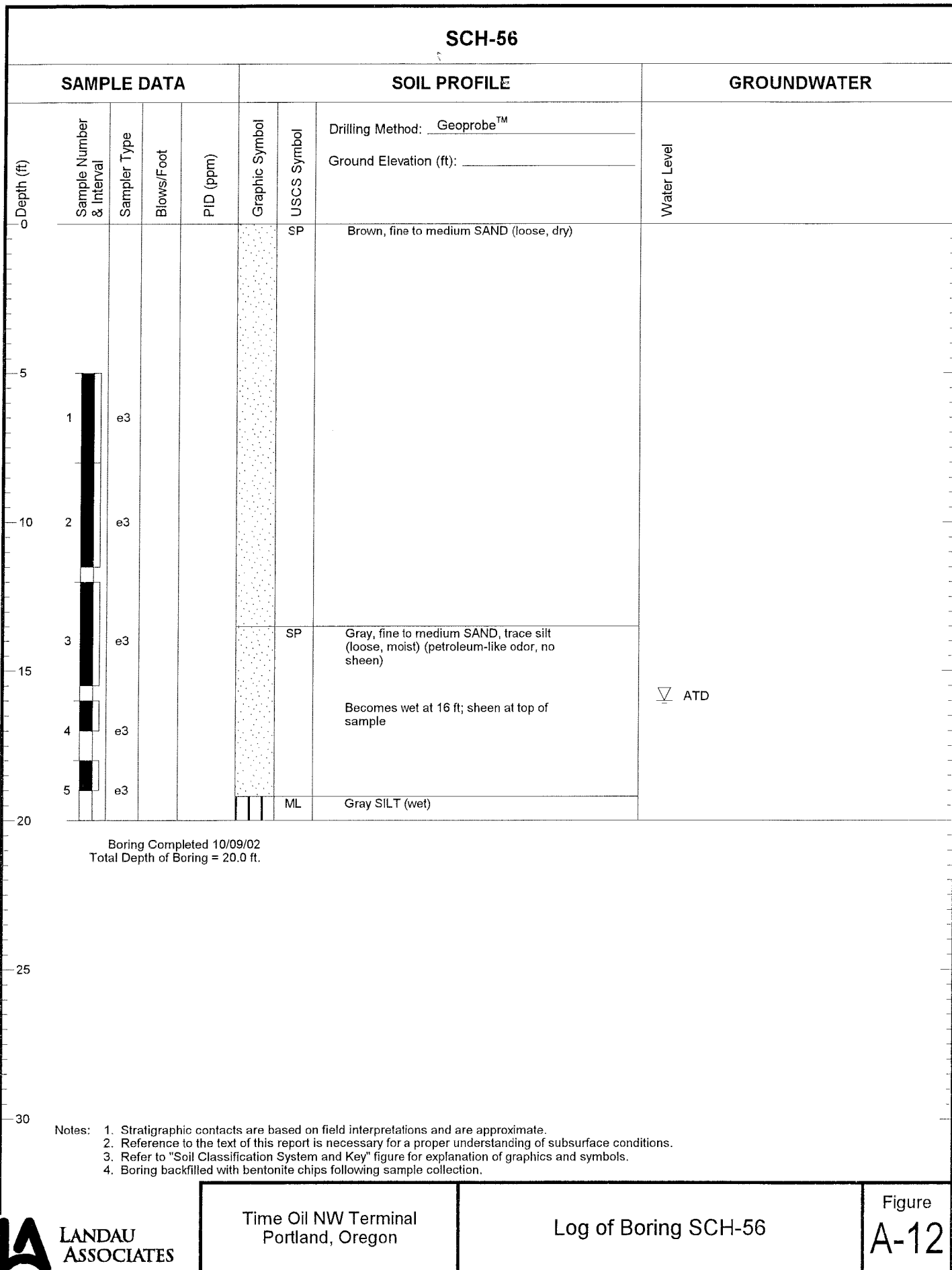
Operator KDV/SVAN/GEOTECH
Sounding: FILG28
Cone Used: 4CH

CPT Date/Time: 07-08-02 12:04
Location: P111-27 NW TERMI
Job Number: LANDAU/231009.31



Maximum Pressure = 17.151 psi
Hydrostatic Pressure

231009.39 9/26/02 S:\MODELING\INT\PROJECTS\231009.39.GPJ SOIL BORING LOG



SCH-57									
SAMPLE DATA				SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): _____	Water Level	
0						GP	Sandy GRAVEL		
1	e3					SP	Brown, fine to medium SAND (loose, dry)		
2	e3					SP	Gray, fine to medium SAND (loose, moist) (moderate to strong petroleum-like odor)		
3	e3			11.6 5.5 2.9 12.9 29.5		SP			
4	e3					ML	Becomes wet at 16.5 ft	▽ ATD	
5	e3			2.7		ML	Gray SILT with wood (wet) (no odor)		

Boring Completed 10/09/02
Total Depth of Boring = 20.0 ft.

Notes:

1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Boring backfilled with bentonite chips following sample collection.

LANDAU ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

Log of Boring SCH-57

Figure
A-13

231009.39 9/26/02 S:\MODELING\GINTW\PROJECTS\231009.39.GPJ SOIL BORING LOG



**LANDAU
ASSOCIATES**

Time Oil NW Terminal
Portland, Oregon

Log of Boring SCH-57

Figure
A-13

BZTO104(e)023226

SCH-58

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™	Water Level
							Ground Elevation (ft):	
						GM	Silty, sandy GRAVEL, with crushed rock	
						SP	Brown, fine to medium SAND (loose, dry) (no odor, no sheen)	
5	1	e3		1.0 1.0				
10	2	e3		1.0 1.0				
15	3	e3						
	4	e3				SP	Gray, with red mottling, fine to medium SAND (loose, moist) Becomes wet at 17.5 ft; trace wood fragments	▽ ATD
20	5	e3				ML	Gray SILT (wet)	

Boring Completed 10/09/02
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



Time Oil NW Terminal
Portland, Oregon

Log of Boring SCH-58

Figure
A-14

231009.39 9/26/02 S:\MODELING\GINT\PROJECTS\231009.39.GPJ SOIL BORING LOG

BZTO104(e)023227

SCH-59

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>	Water Level
							Ground Elevation (ft): _____	
0								
1	1	e3				GM	Silty, sandy GRAVEL, with crushed rock	
5								
10	2	e3				SP	Brown, fine to medium SAND (loose, dry)	
15								
16.3				6.4				
17				10.3				
18.4				35				
19	3	e3		39		SP	Gray, fine to medium SAND (loose, moist) (moderate to strong non-petroleum odor, no sheen)	
20								
21								
22								
23								
24								
25								
26								
27								
28								
29								
30								
31								
32								
33								
34								
35								
36								
37								
38								
39								
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79								
80								
81								
82								
83								
84								
85								
86								
87								
88								
89								
90								
91								
92								
93								
94								
95								
96								
97								
98								
99								
100								

Boring Completed 10/09/02
Total Depth of Boring = 18.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.

231009.39 9/26/02 S:\MODELING\GINT\PROJECTS\231009.39.GPJ SOIL BORING LOG



Time Oil NW Terminal
Portland, Oregon

Log of Boring SCH-59

Figure
A-15

BZTO104(e)023228

SCH-60									
SAMPLE DATA				SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u> Ground Elevation (ft): _____	Water Level	
0									
						GP	Sandy GRAVEL		
						SP	Brown, fine to medium SAND (loose, dry)		
5	1	e3		2.4					
10	2	e3							
15	3	e3							
	4	e3				SP	Gray, fine to medium SAND (loose, wet)	▽ ATD	
20	5	e3				ML	Gray SILT with wood fragments (wet)		
Boring Completed 10/09/02 Total Depth of Boring = 20.0 ft.									
25									
30									

Notes:

1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Boring backfilled with bentonite chips following sample collection.

231009.39 9/26/02 S:\MODELING\GINTW\PROJECTS\231009.39.GPJ SOIL BORING LOG



LANDAU
ASSOCIATES

Time Oil NW Terminal
Portland, Oregon

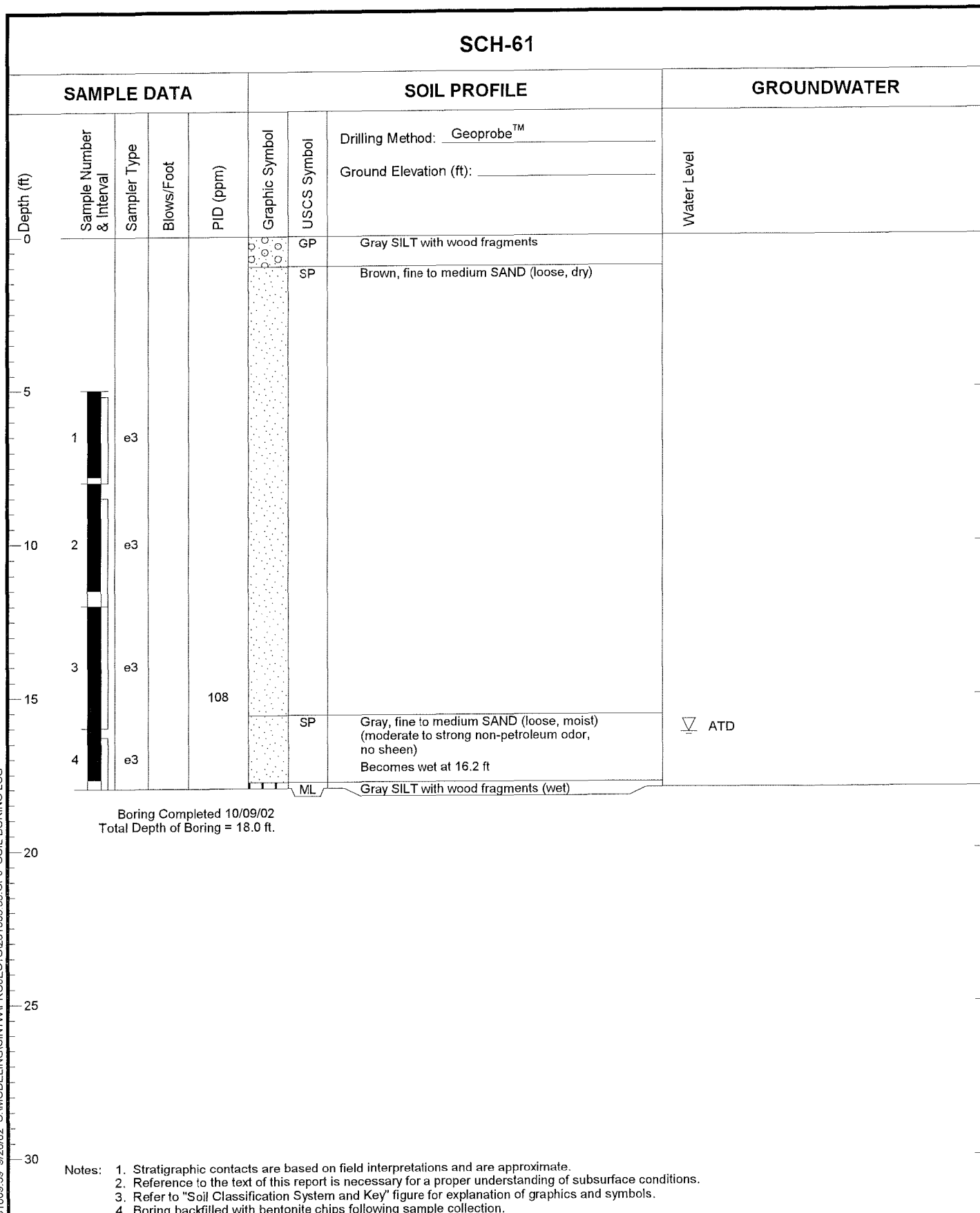
Log of Boring SCH-60

Figure

A-16

BZTO104(e)023229

231009.39 9/26/02 S:\MODELING\INT\PROJECTS\231009.39.GPJ SOIL BORING LOG



Time Oil NW Terminal
Portland, Oregon

Log of Boring SCH-61

Figure
A-17

BZTO104(e)023230

SCH-62

SAMPLE DATA					SOIL PROFILE		GROUNDWATER
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: Geoprobe™
							Ground Elevation (ft):
						GP	Sandy GRAVEL
						SP	Brown, fine to medium SAND (loose, dry)
5	1	e3		0.0			
10	2	e3		0.0			
15	3	e3		0.0			
							Red mottling
	4	e3		0.0		SP	Gray, fine to medium SAND (loose, wet) (no odor, no sheen)
20	5	e3				ML	Gray SILT with trace organic material (wet)

▽ ATD

Boring Completed 10/09/02
Total Depth of Boring = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.

231009.39 9/26/02 S:\MODELING\GINT\PROJECTS\231009.39.GPJ SOIL BORING LOG






Time Oil NW Terminal
Portland, Oregon

Log of Boring SCH-62

Figure
A-18

BZTO104(e)023231

SCH-63

SAMPLE DATA					SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Geoprobe™</u>		Water Level
							Ground Elevation (ft): _____		
0						GP	Sandy GRAVEL		
5	1	e3				SP	Brown, fine to medium SAND (loose, dry)		
10	2	e3							
15	3	e3		43 4.0		SP	Gray, fine to medium SAND (loose, moist) (moderate to strong petroleum-like odor, no sheen) Becomes wet at 16 ft	▽ ATD	
	4	e3				ML	Gray SILT (wet)		

Boring Completed 10/09/02
Total Depth of Boring = 18.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Boring backfilled with bentonite chips following sample collection.



Time Oil NW Terminal
Portland, Oregon

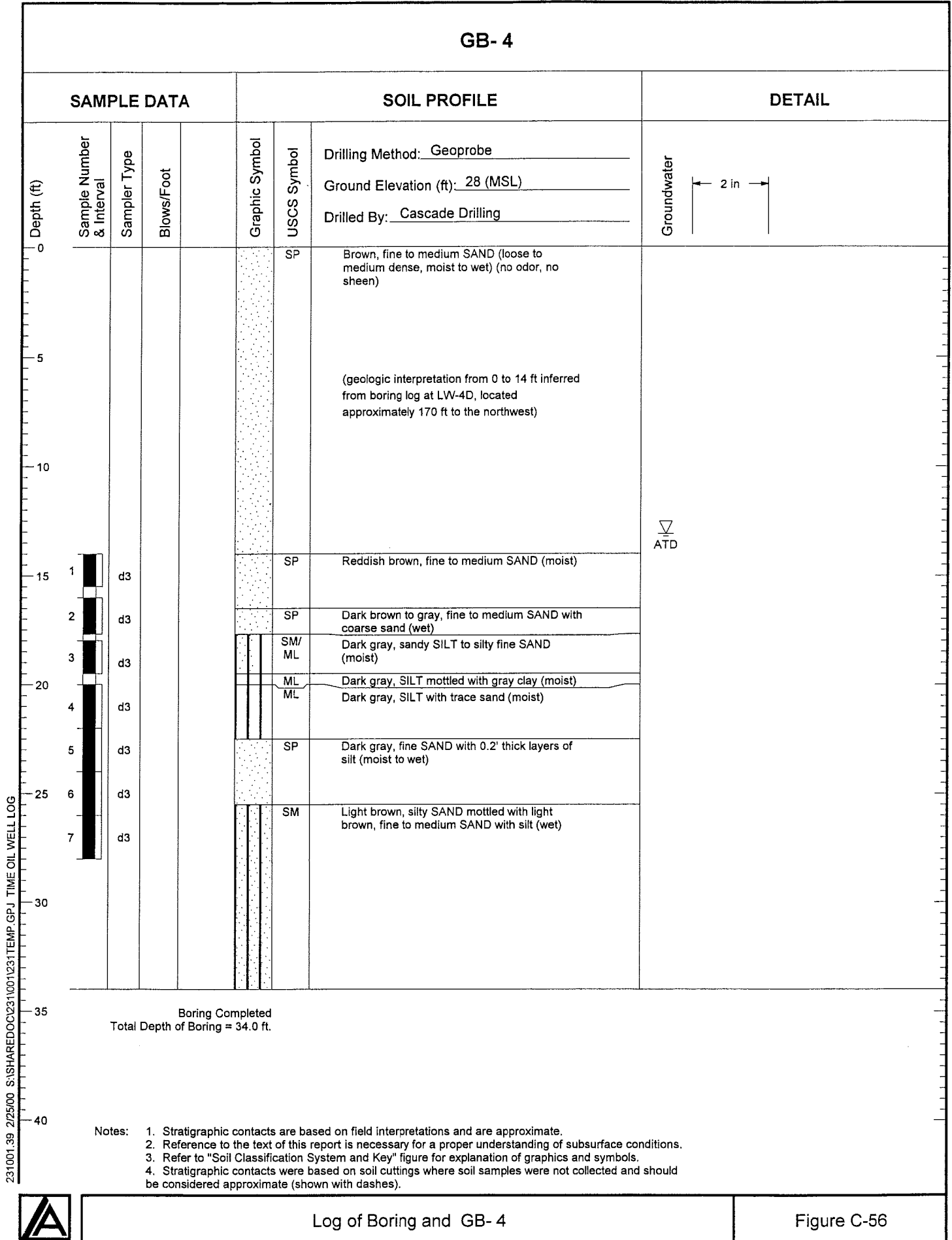
Log of Boring SCH-63

Figure
A-19

231009.39 9/26/02 S:\MODELING\GINT\WAPROJECTS\231009.39.GPJ SOIL BORING LOG

Soil Borings/Well Completion Logs

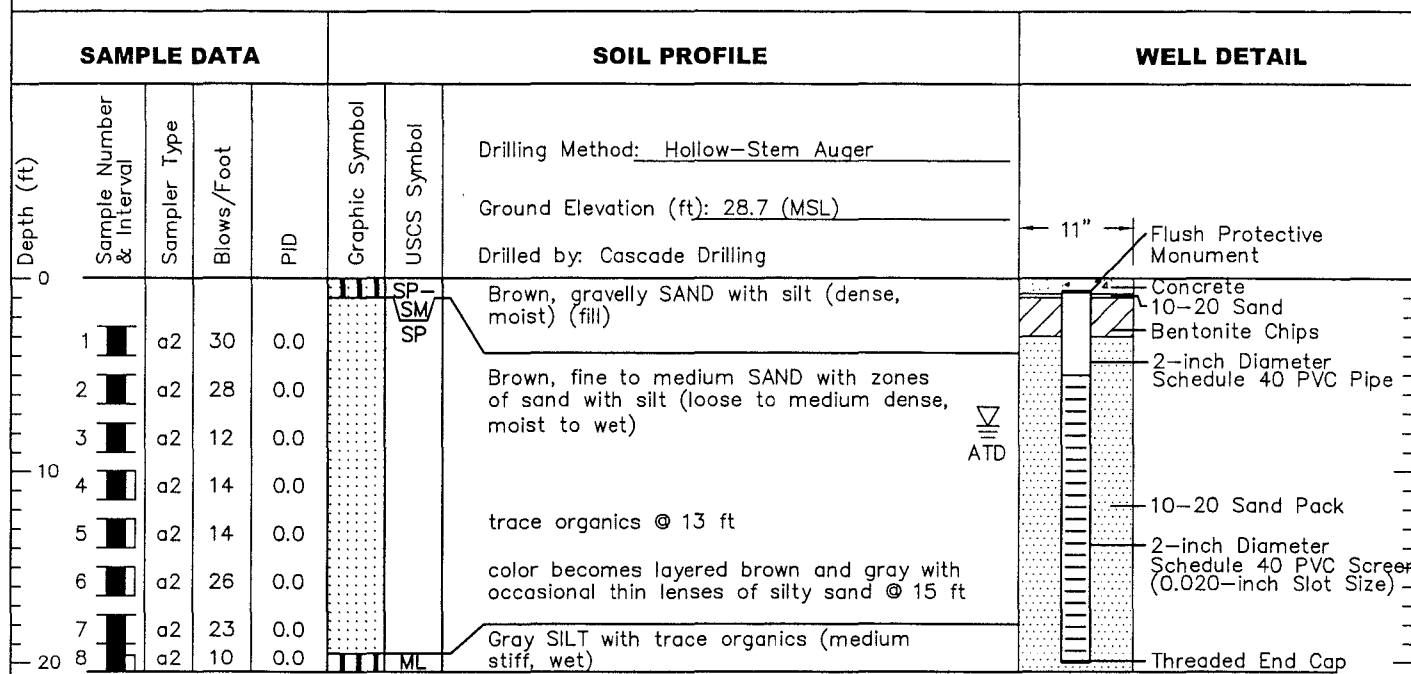
GB- 4



Log of Boring and GB- 4

Figure C-56

LW-1S



Boring Completed 03/14/97
Total Depth of Boring = 20.5 ft.

Well Completed 03/14/97
Elevation at Top of Well Casing = 28.0 ft.
Elevation at Top of PVC Casing = 27.96 ft.
Total Depth of Well = 20.0 ft BGS
Screened Interval = 5 to 20 ft BGS

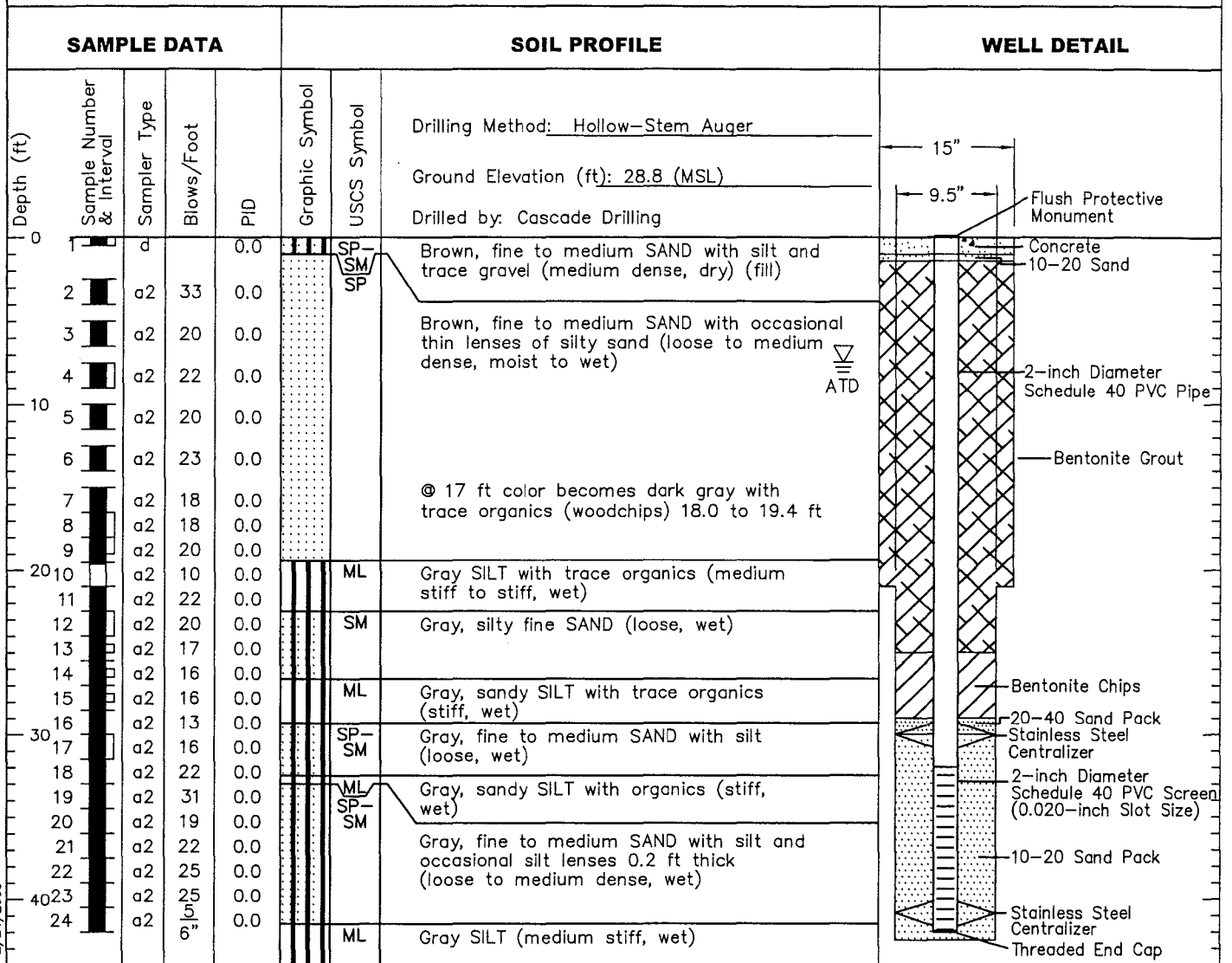
- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring and Monitoring Well LW-1S

Figure C-31

LW-1D



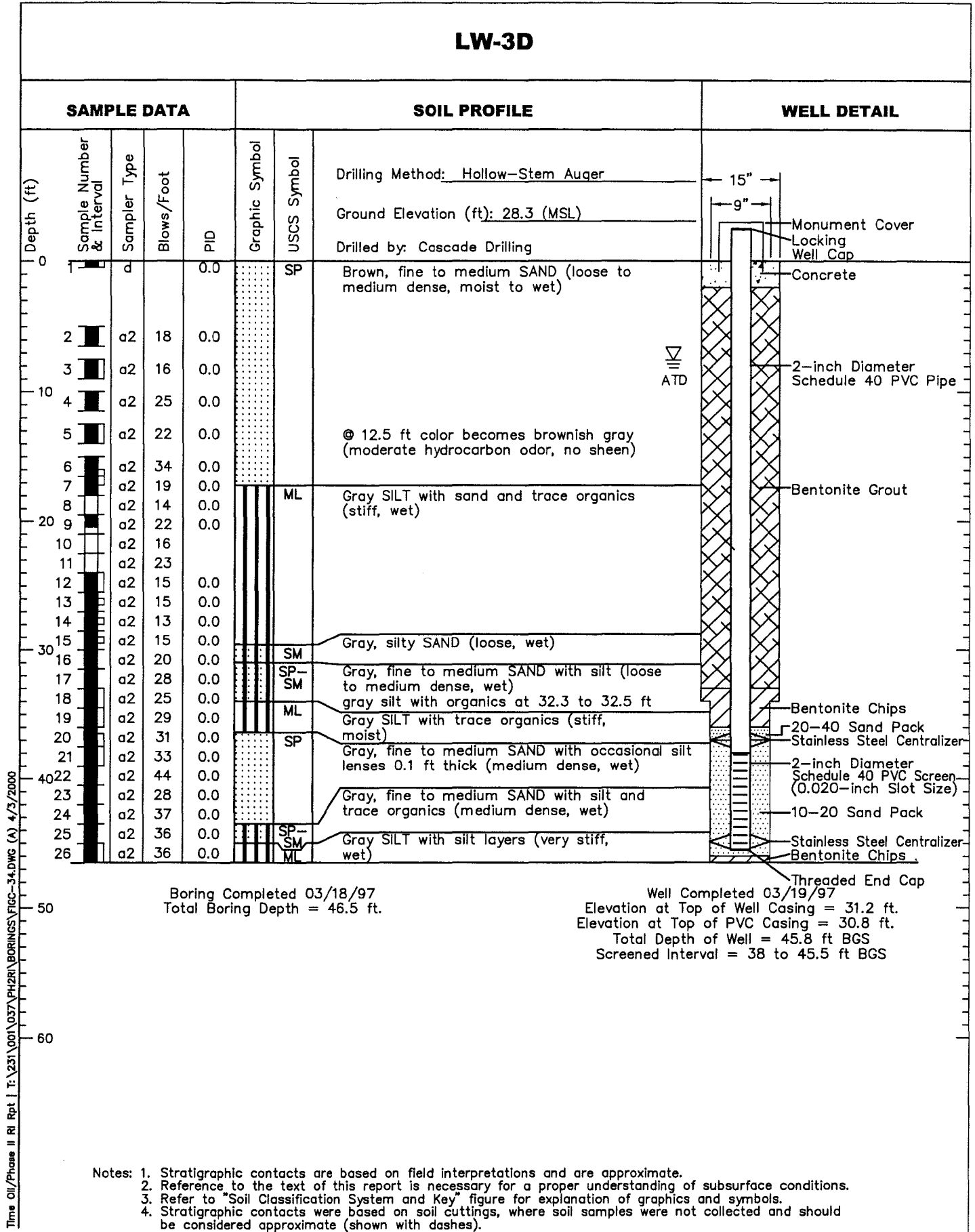
- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring and Monitoring Well LW-1D

Figure C-32

LW-3D

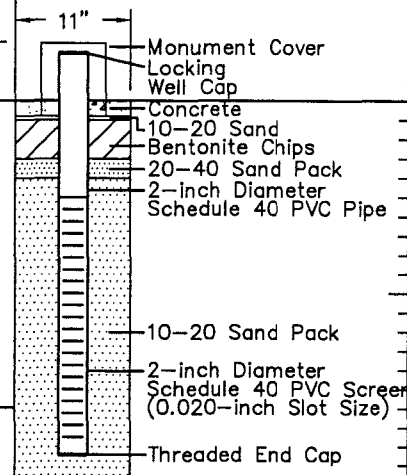


Boring and Monitoring Well LW-3D

Figure C-34

LW-4S

SAMPLE DATA					SOIL PROFILE		WELL DETAIL
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	
0							Drilling Method: Hollow-Stem Auger
							Ground Elevation (ft): 28.3 (MSL)
							Drilled by: Cascade Drilling
1	a2	35	0.0			SP	Brown, fine to medium SAND (loose to medium dense, moist to wet)
2	a2	18	0.0				some sandy gravel from 2.5 to 4.0 ft
3	a2	19	0.0				
4	a2	17	0.0				
5	b2	26	0.0				
6	a2	11	0.0				
7	a2	17	0.0				
8	b2	10	0.0			ML	Gray SILT with trace organics (medium stiff, wet) (slight organic odor, no sheen)



Boring Completed 03/13/97
Total Depth of Boring = 20.0 ft.

Well Completed 03/14/97
Elevation at Top of Well Casing = 31.0 ft.
Elevation at Top of PVC Casing = 30.26 ft.
Total Depth of Well = 18.5 ft BGS
Screened Interval = 5.5 to 18.0 ft BGS

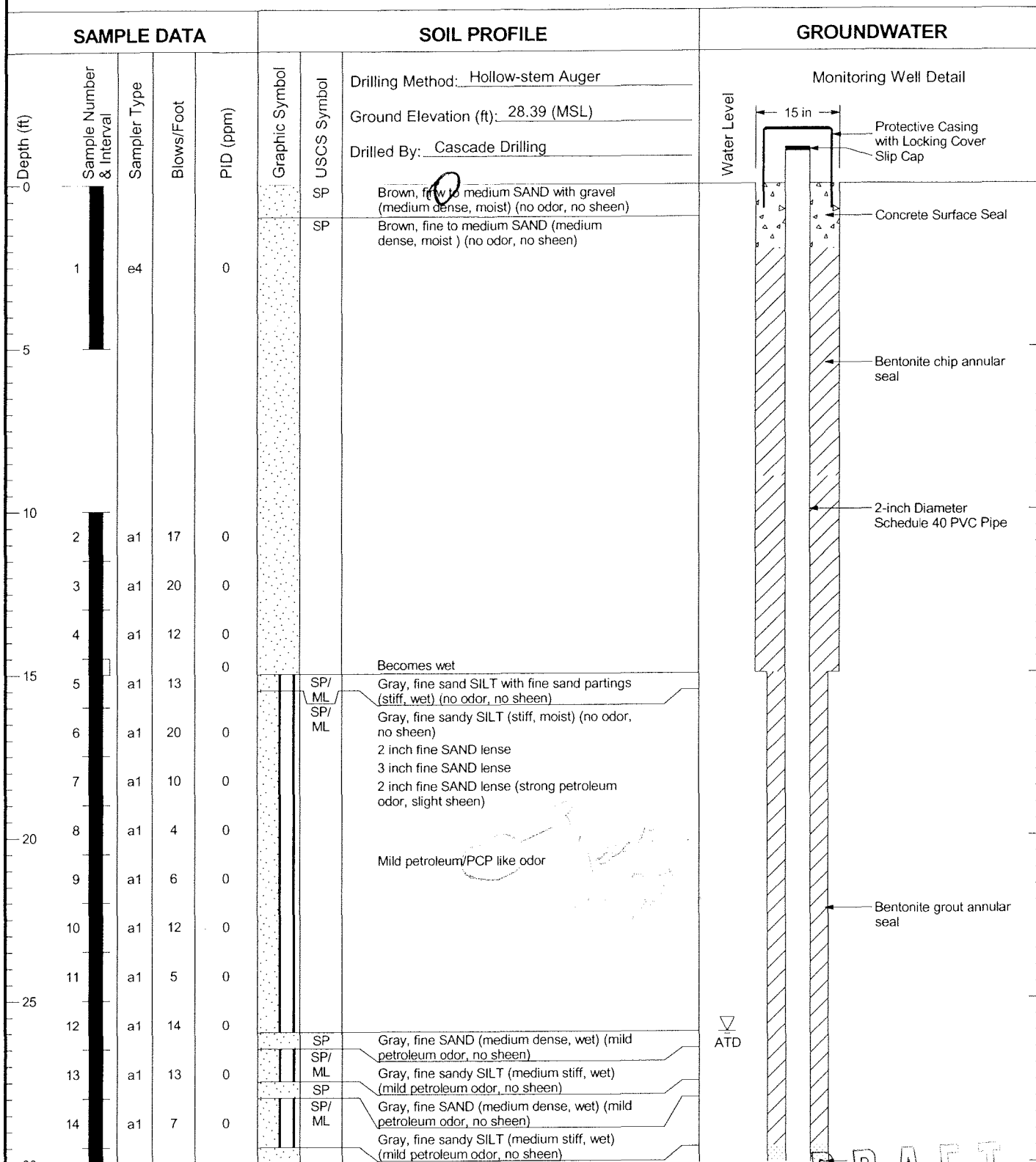
- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring and Monitoring Well LW-4S

Figure C-35

LW4DR



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

DRAFT

231001.123 12/3/04 I:\MODELING\GINT\PROJECTS\231001.GPJ WELL LOG



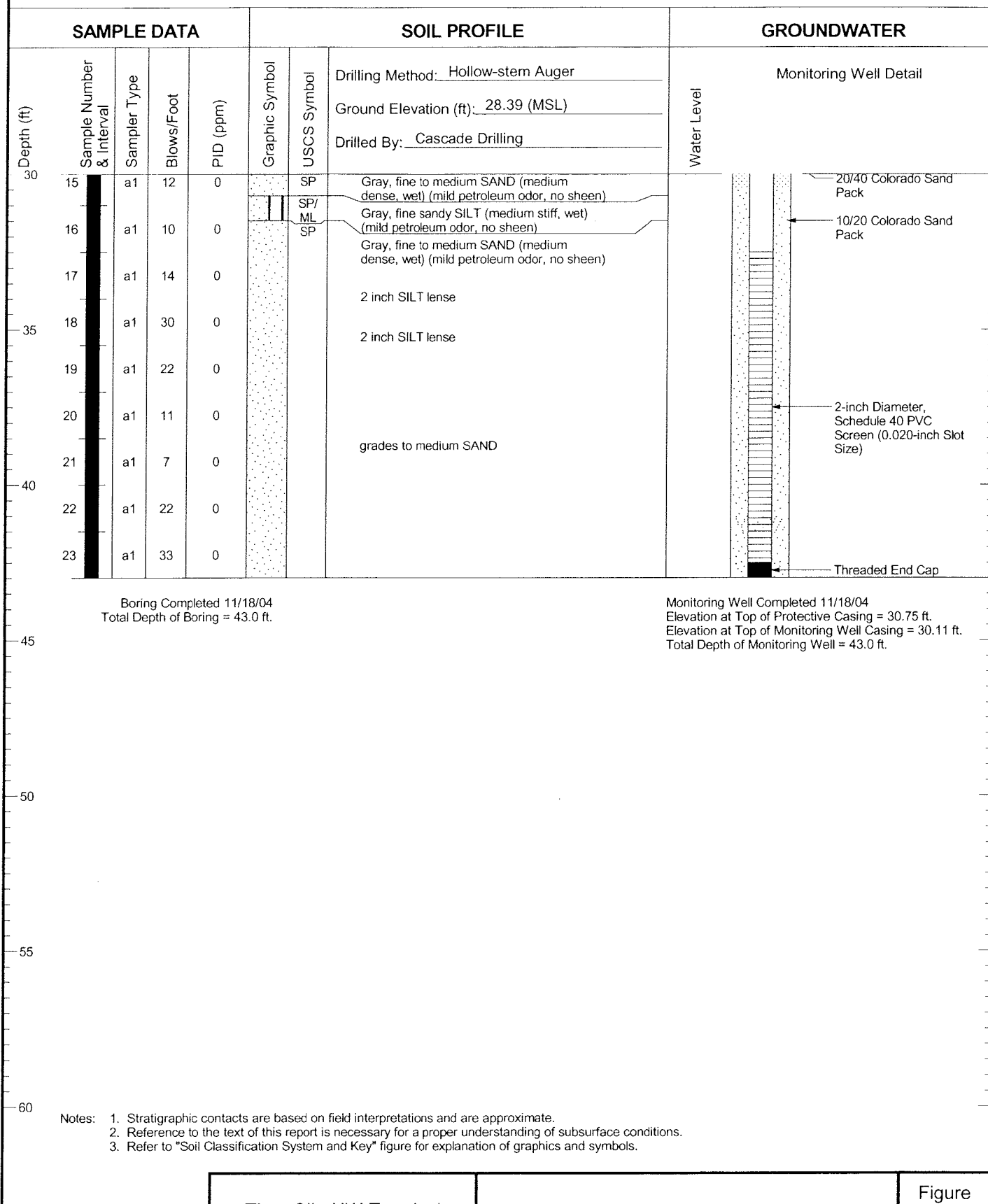
Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW4DR

Figure
A-
(1 of 2)

BZTO104(e)023239

LW4DR



231001.123 12/3/04 I:\MODELING\GINT\PROJECTS\231001.GPJ WELL LOG



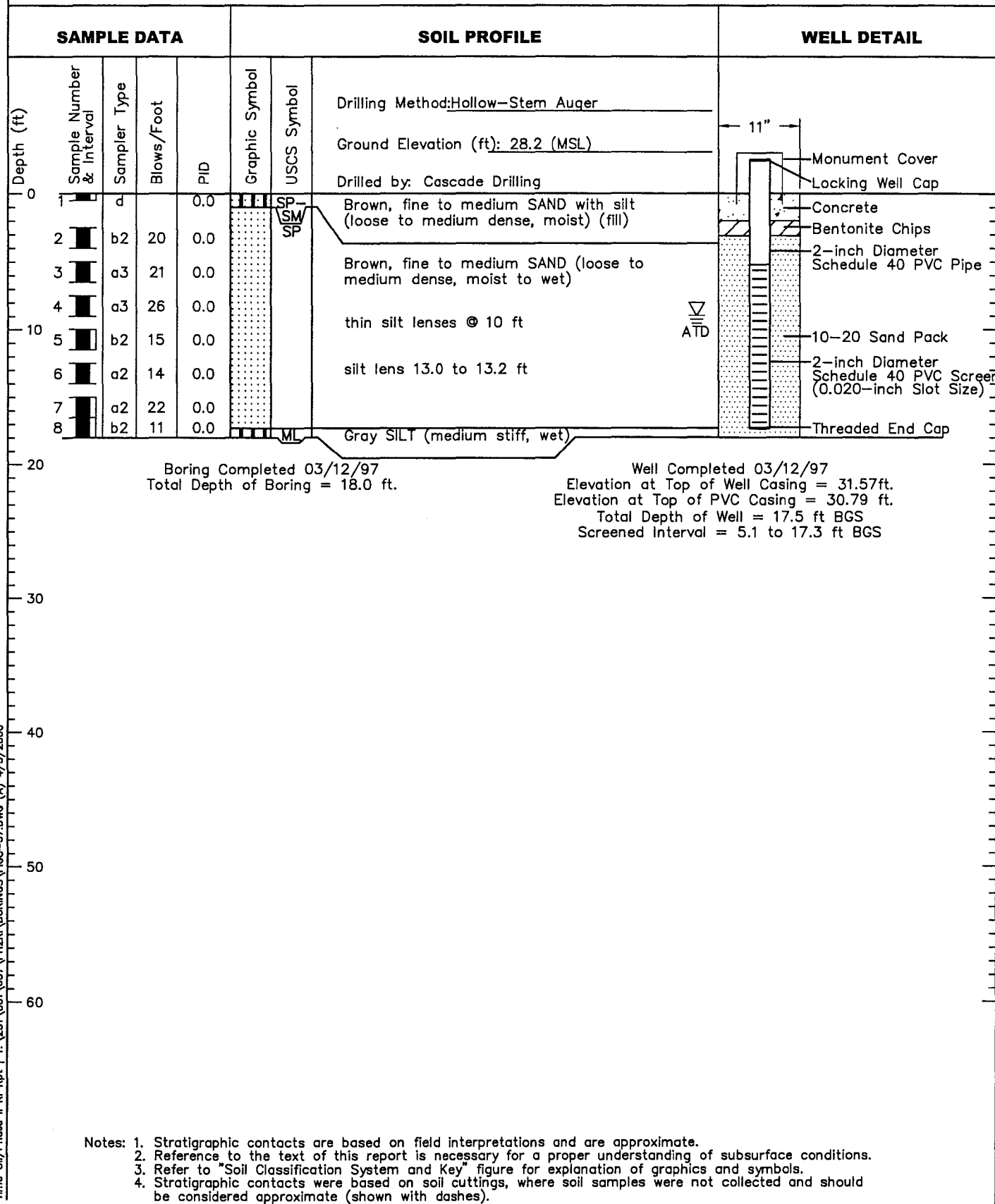
Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW4DR

Figure
A-
(2 of 2)

BZTO104(e)023240

LW-5S



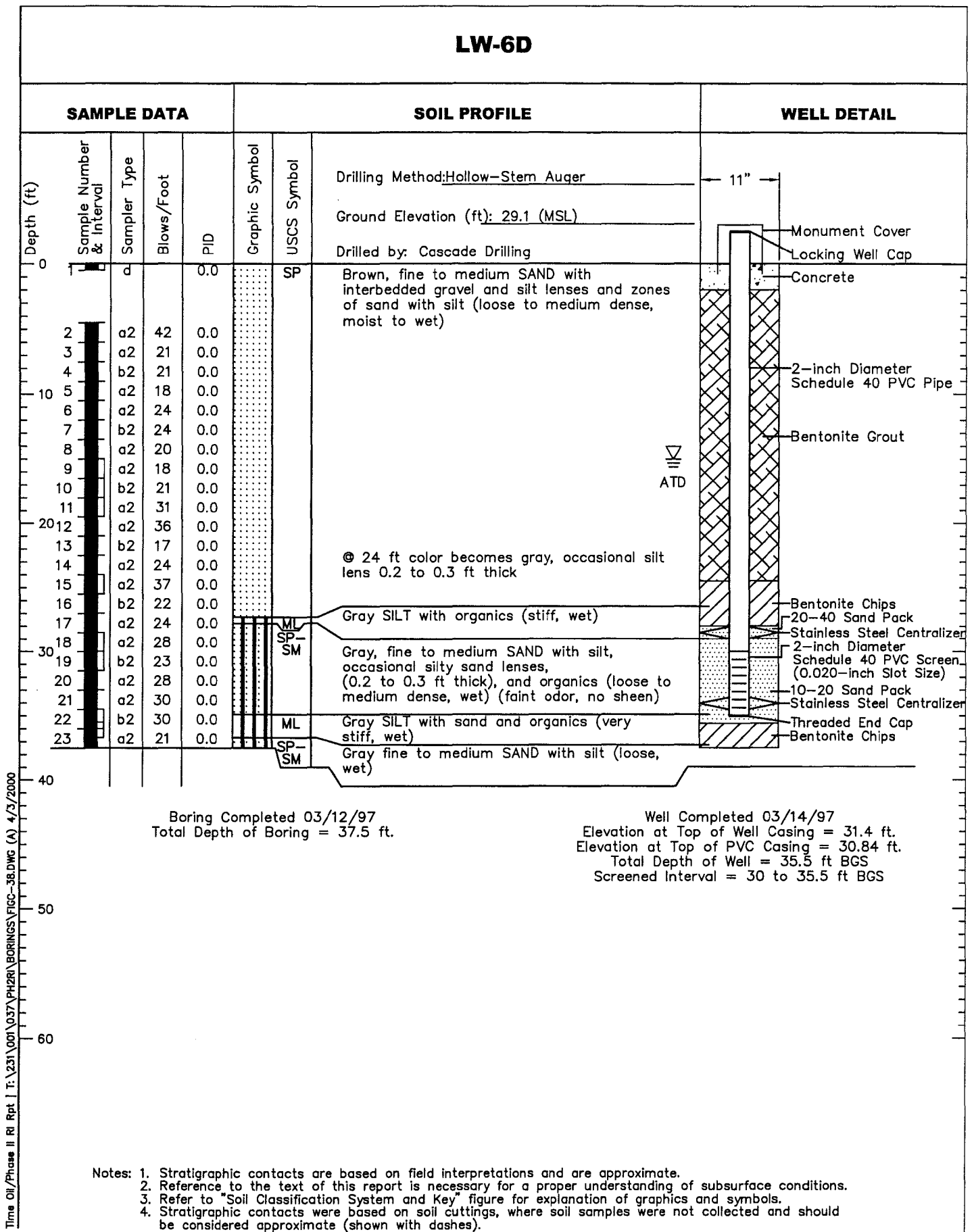
Time Oil/Phase II RI Rpt | T: 1231\001\037\PH2RI\BORINGS\FIG-C-37.DWG (A) 4/3/2000



Boring and Monitoring Well LW-5S

Figure C-37

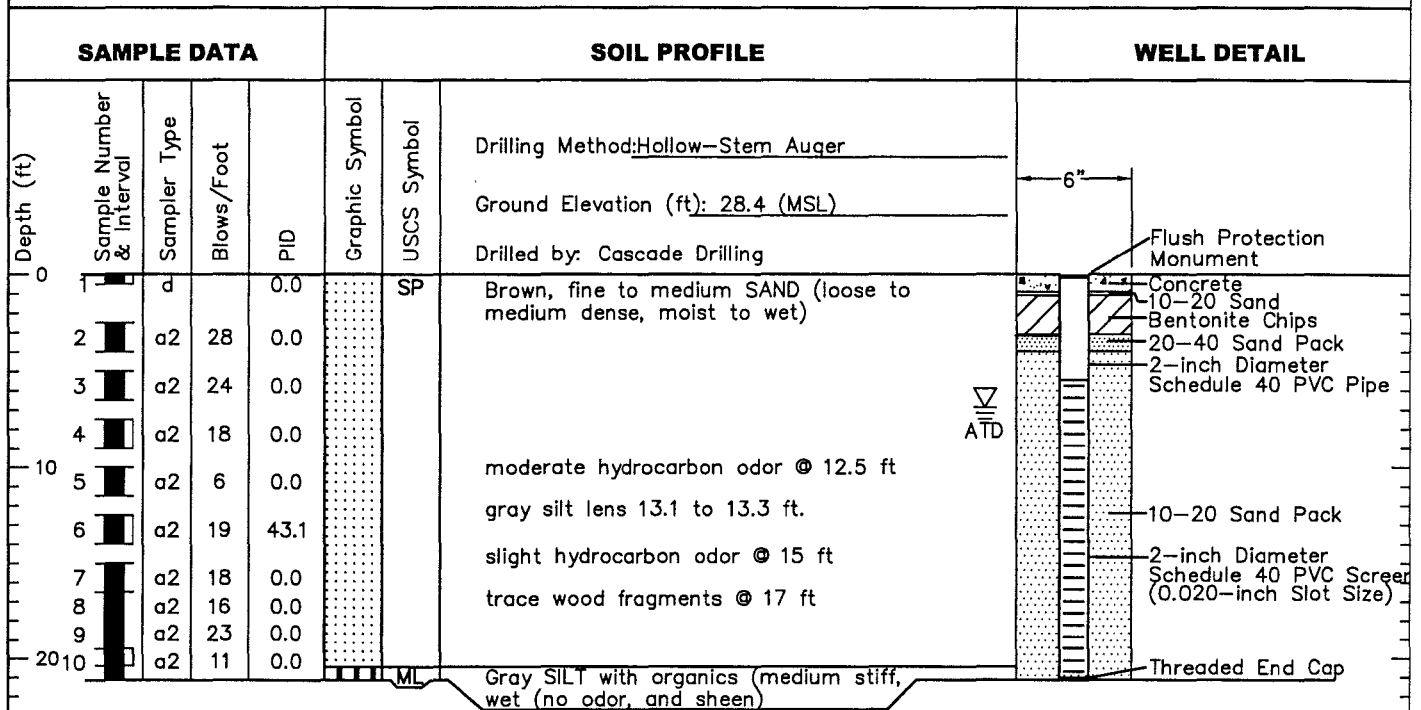
LW-6D



Boring and Monitoring Well LW-6D

Figure C-38

LW-7S



Boring Completed 03/12/97
Total Depth of Boring = 21.0 ft.

Well Completed 03/12/97
Elevation at Top of Well Casing = 28.4 ft.
Elevation at Top of PVC Casing = 28.10 ft.
Total Depth of Well = 21.0 ft BGS
Screened Interval = 5.5 to 20.5 ft BGS

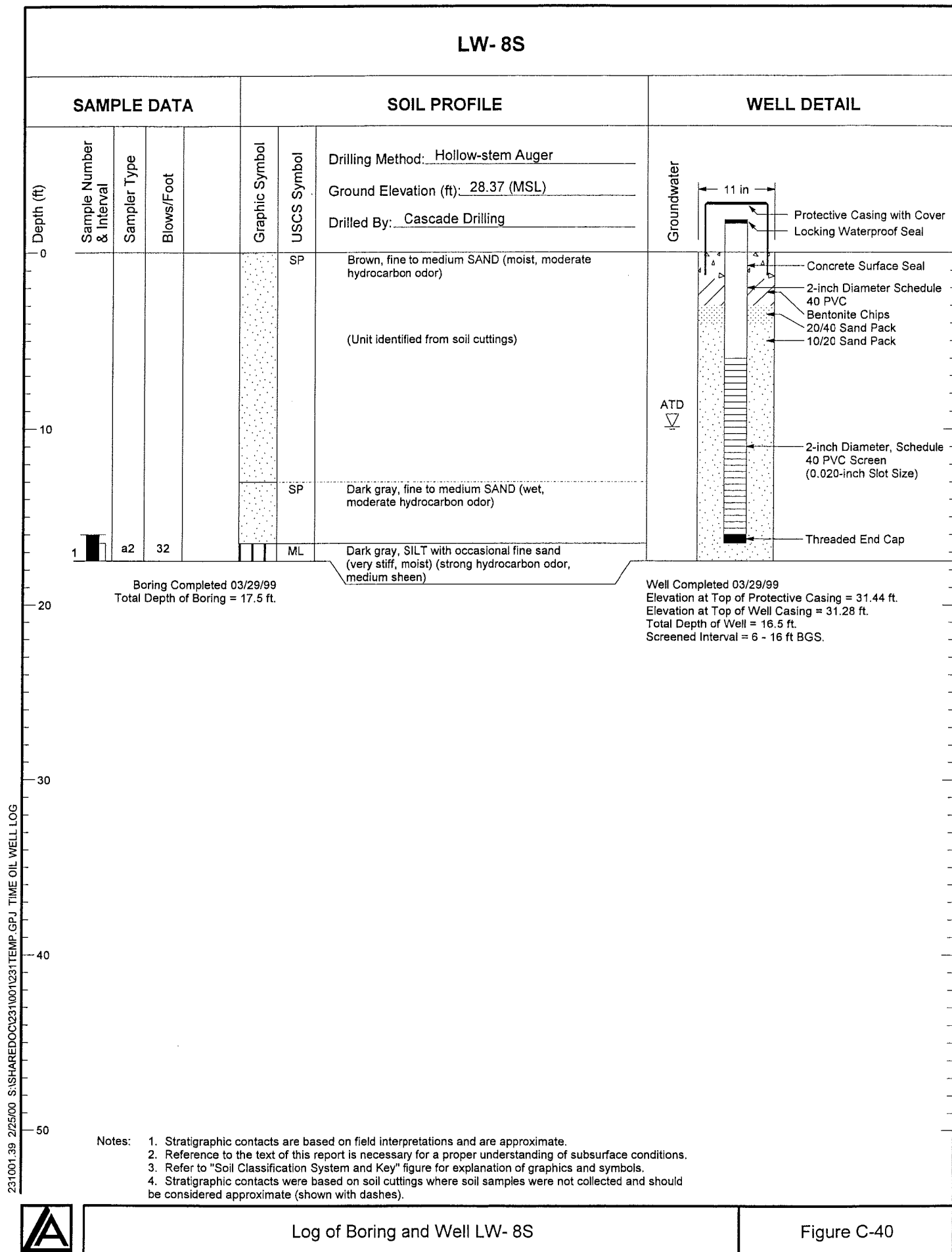
- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring and Monitoring Well LW-7S

Figure C-39

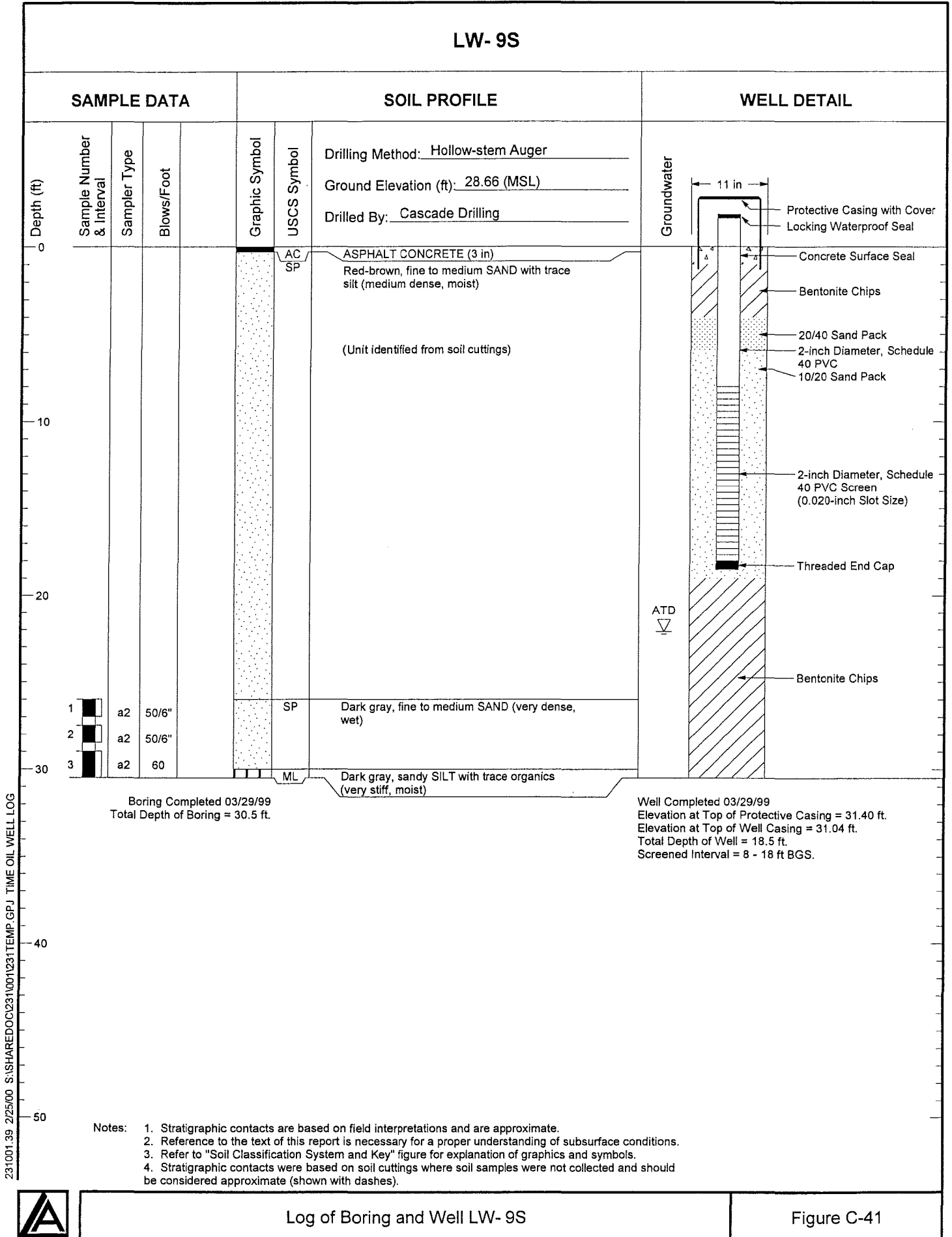
LW- 8S



Log of Boring and Well LW- 8S

Figure C-40

LW- 9S

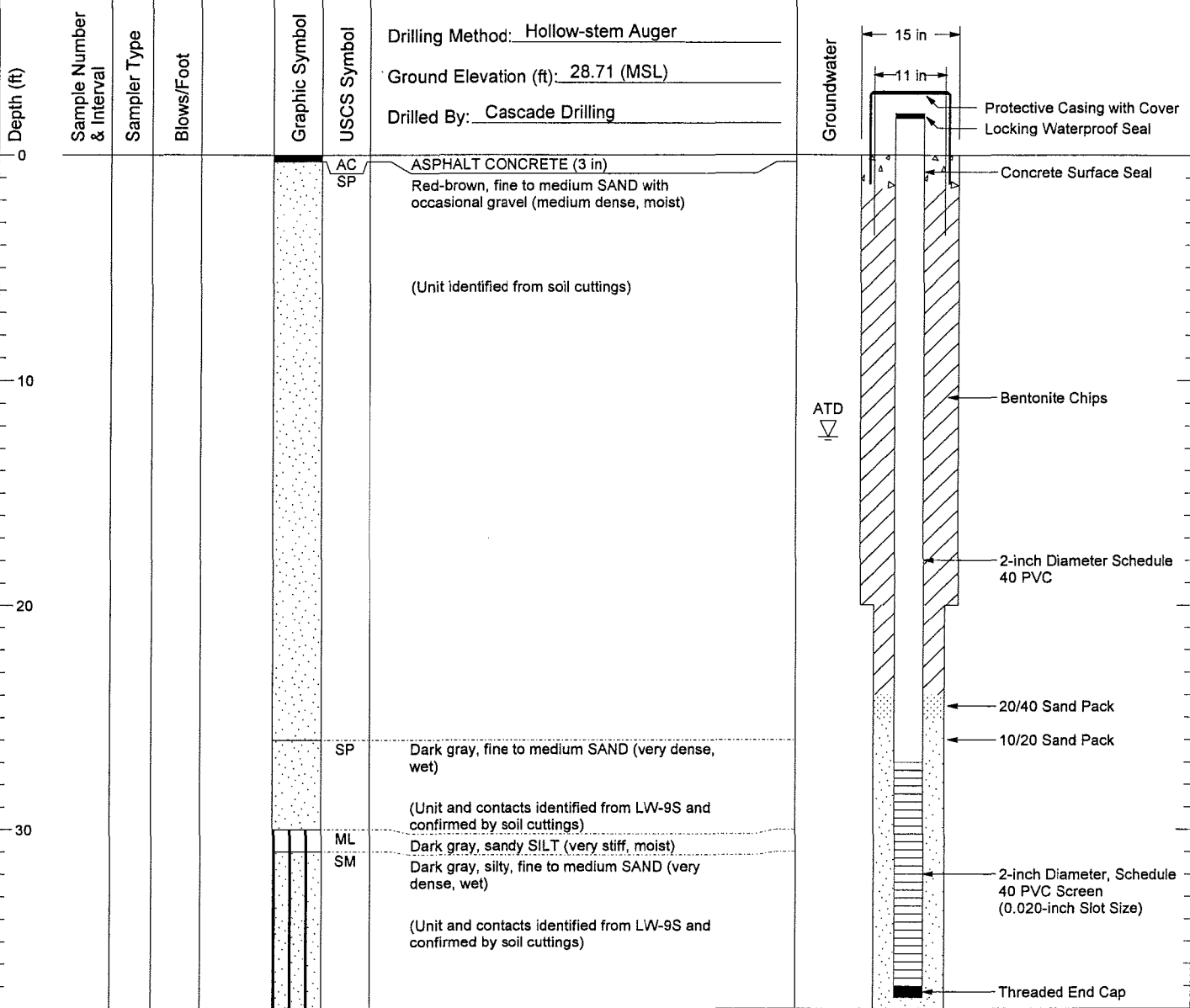


LW- 9D

SAMPLE DATA

SOIL PROFILE

WELL DETAIL



Boring Completed 03/31/99
Total Depth of Boring = 38.0 ft.

Well Completed 03/31/99
Elevation at Top of Protective Casing = 31.27 ft.
Elevation at Top of Well Casing = 30.98 ft.
Total Depth of Well = 37.5 ft.
Screened Interval = 27 - 37 ft BGS.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings where soil samples were not collected and should be considered approximate (shown with dashes).

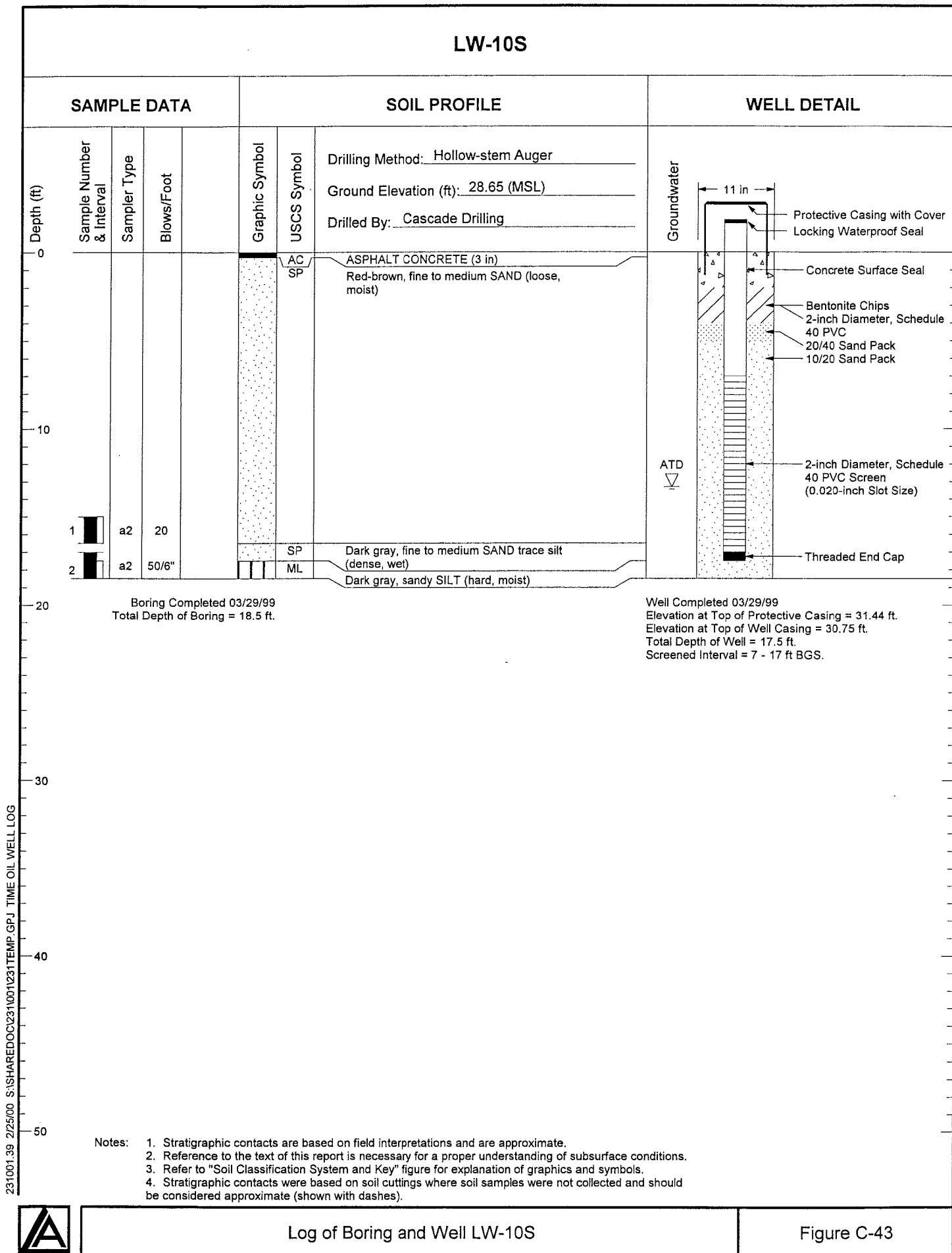


Log of Boring and Well LW- 9D

Figure C-42

BZTO104(e)023246

LW-10S



Log of Boring and Well LW-10S

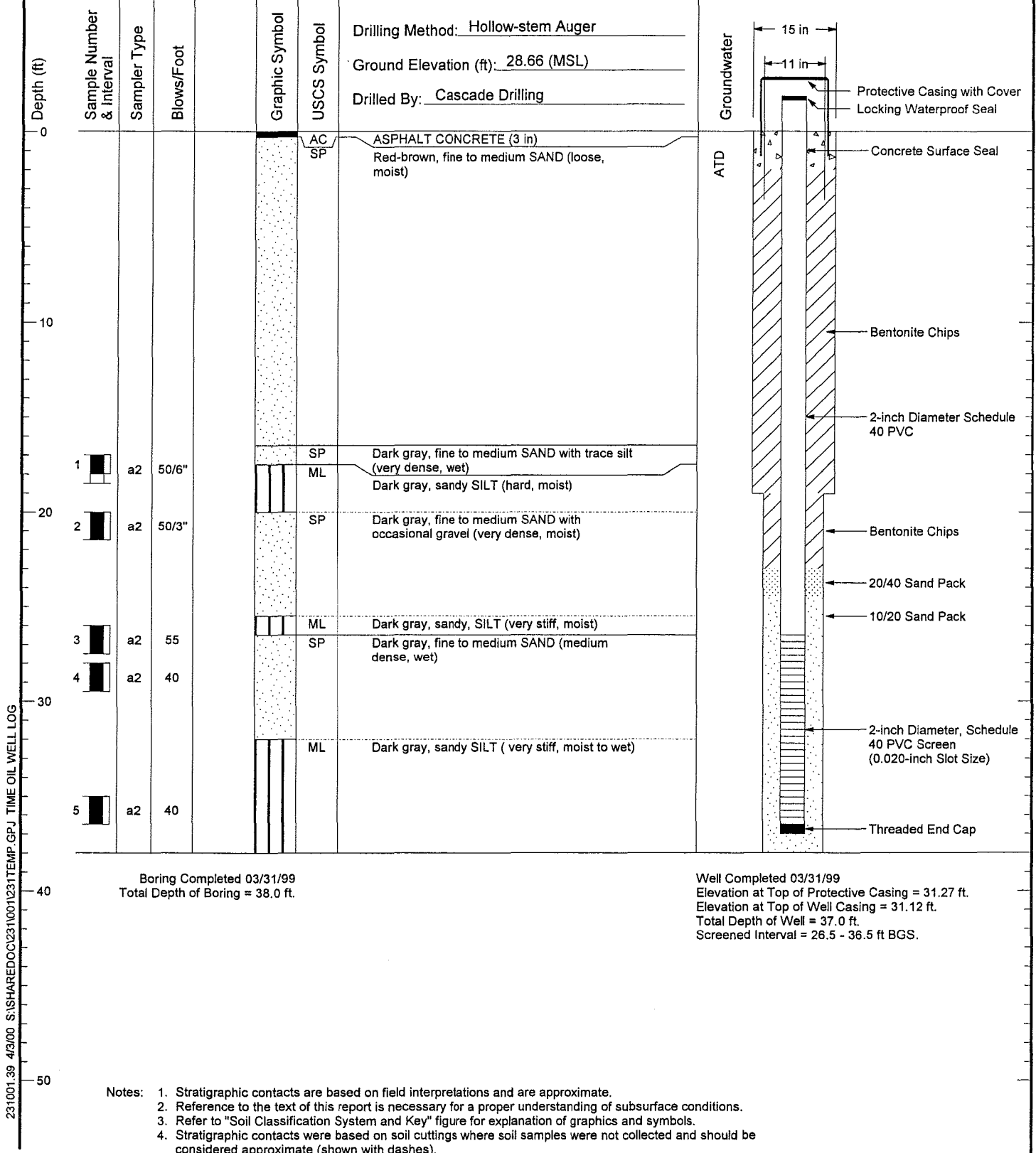
Figure C-43

LW-10D

SAMPLE DATA

SOIL PROFILE

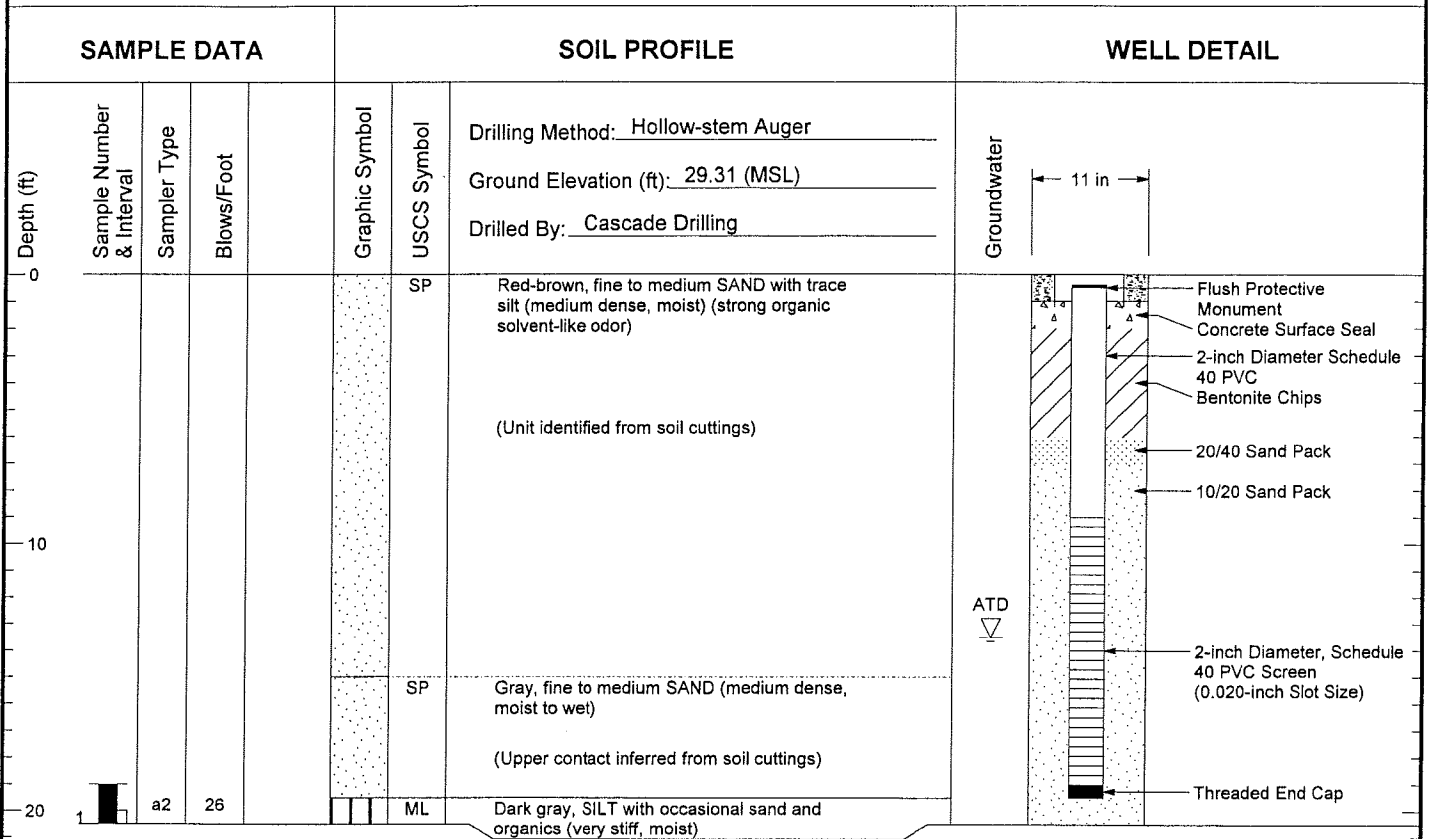
WELL DETAIL



Log of Boring and Well LW-10D

Figure C-44

LW-11S



Boring Completed 03/30/99
Total Depth of Boring = 20.5 ft.

Well Completed 03/30/99
Elevation at Top of Protective Casing = 29.31 ft.
Elevation at Top of Well Casing = 29.10 ft.
Total Depth of Well = 19.5 ft.
Screened Interval = 9 - 19 ft BGS.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings where soil samples were not collected and should be considered approximate (shown with dashes).



Log of Boring and Well LW-11S

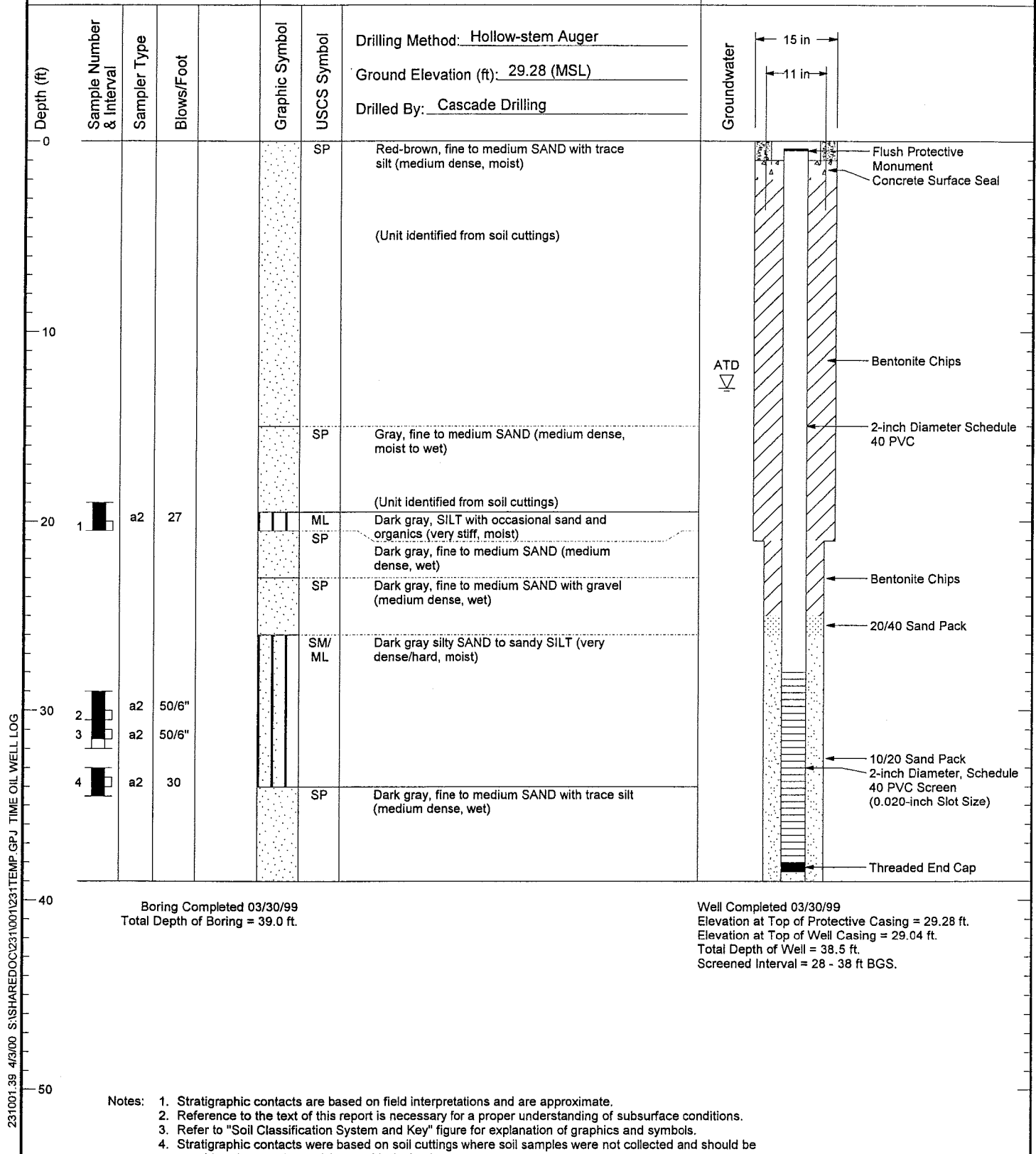
Figure C-45

LW-11D

SAMPLE DATA

SOIL PROFILE

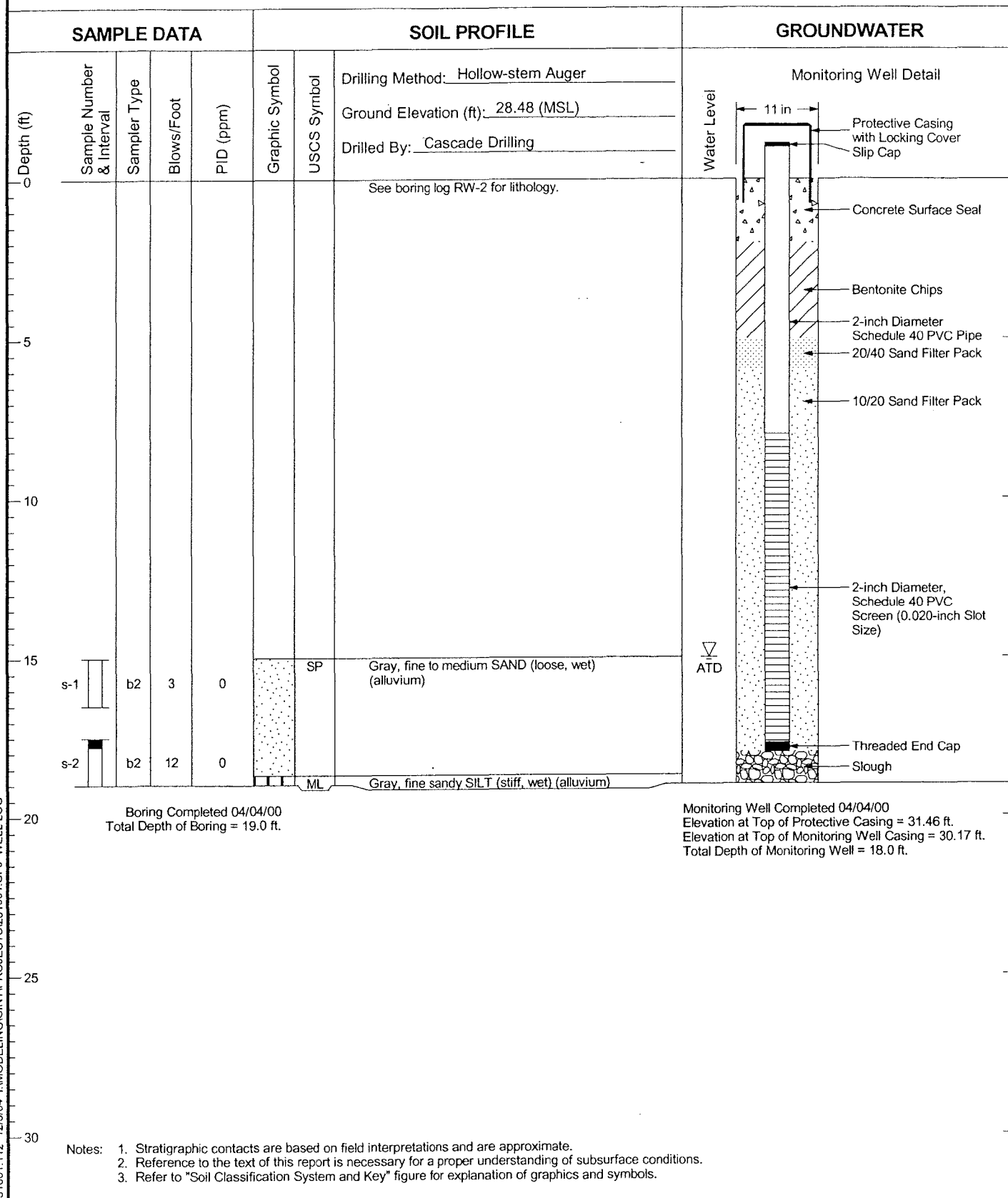
WELL DETAIL



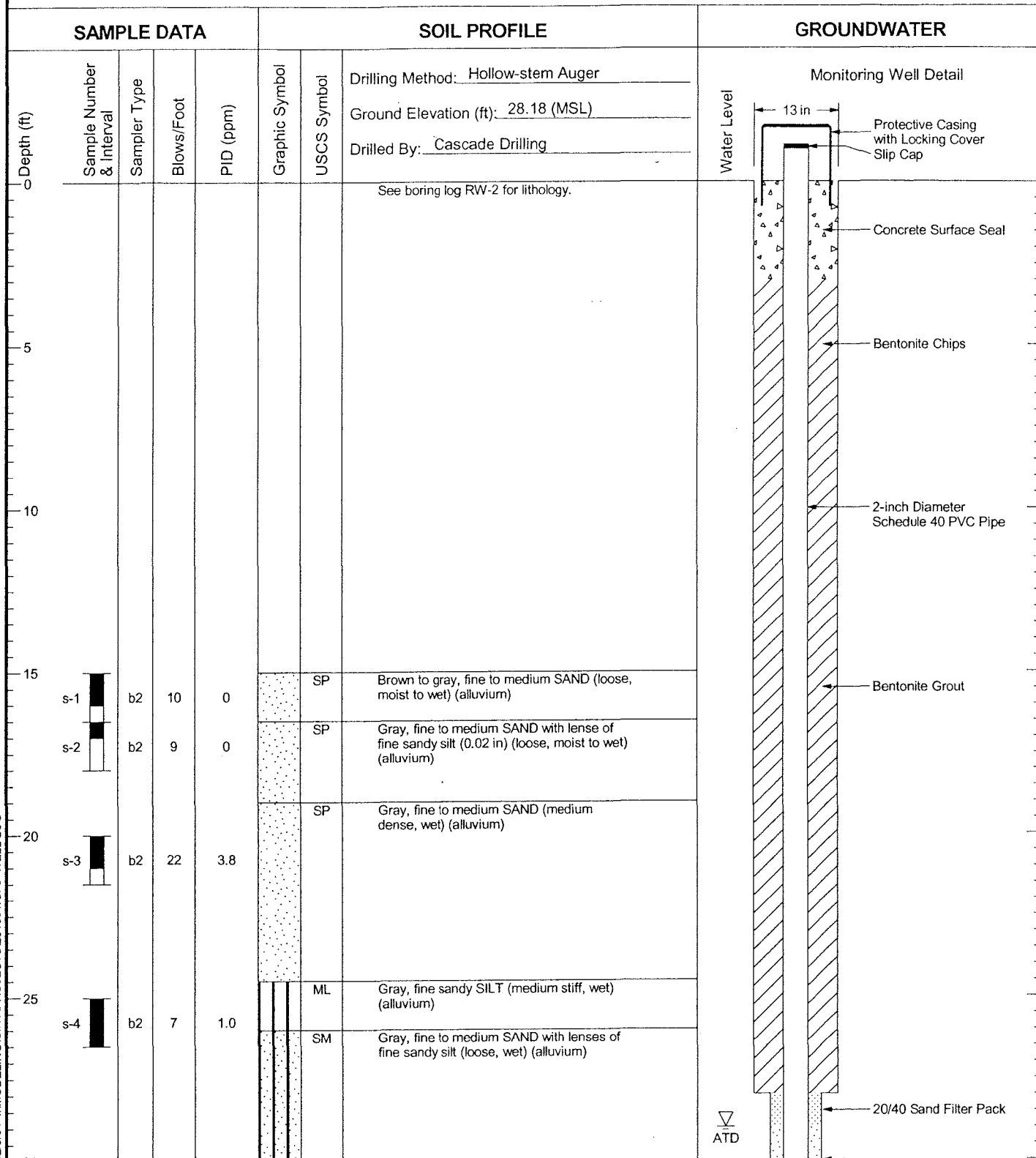
Log of Boring and Well LW-11D

Figure C-46

LW13S



LW14D



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231001.112 12/3/04 I:\MODELING\INT\PROJECTS\231001.GPJ WELL LOG



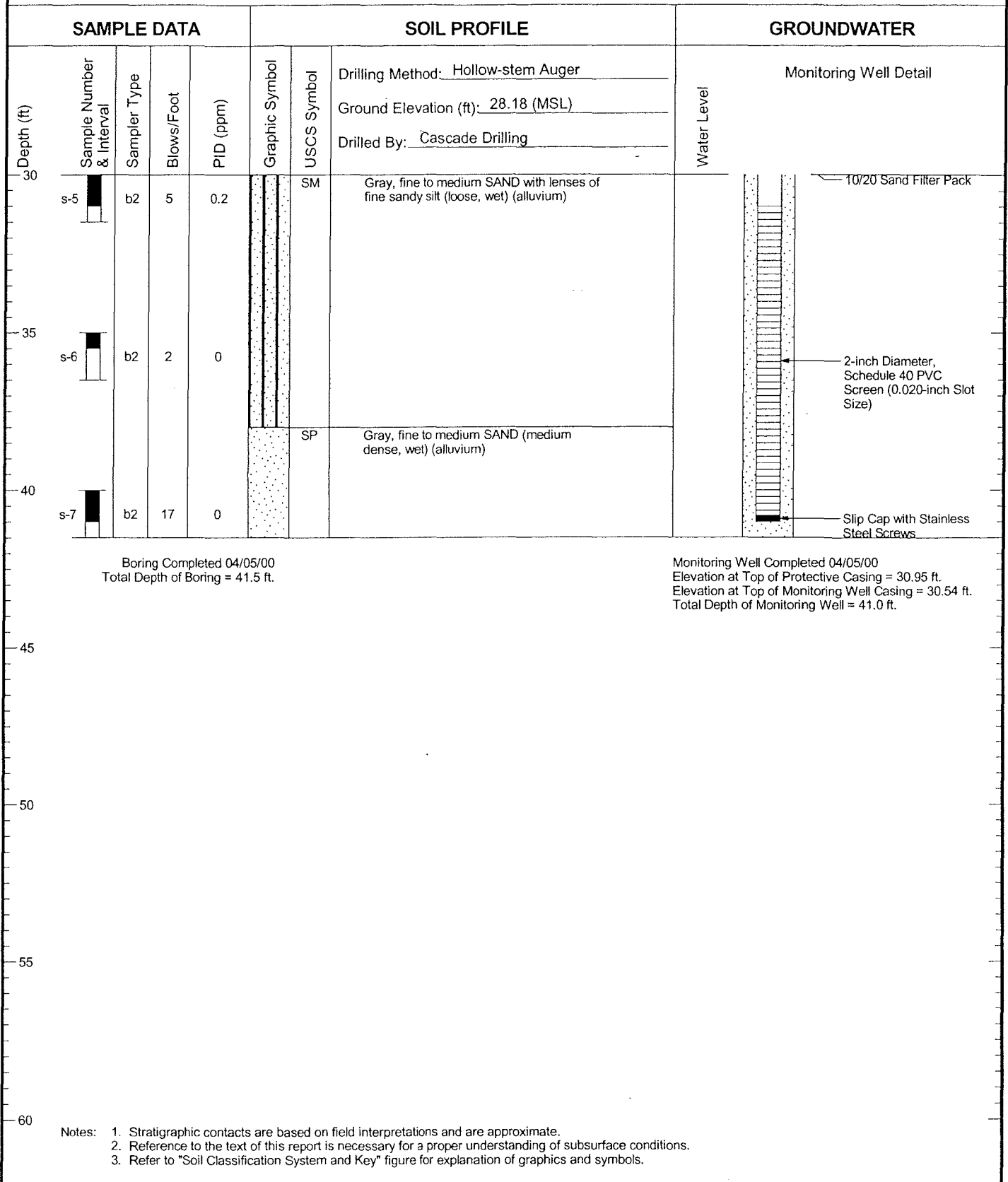
Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW14D

Figure
A-
(1 of 2)

BZTO104(e)023252

LW14D



231001.112 12/3/04 I:\MODELING\GINT\PROJECTS\231001.GPJ WELL LOG



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Time Oil - NW Terminal
Portland, OR

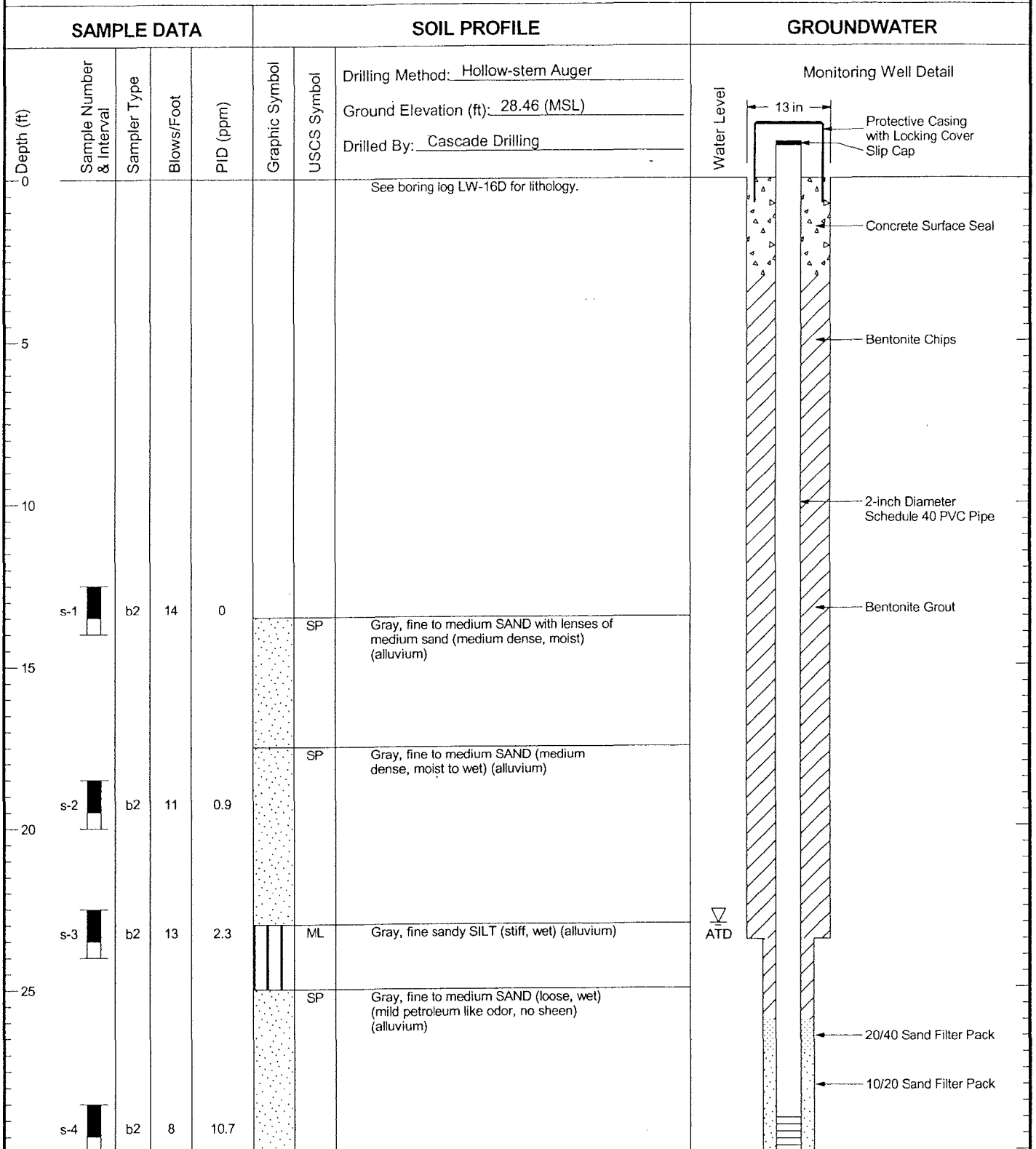
Log of Monitoring Well LW14D

Figure

A-
(2 of 2)

BZTO104(e)023253

LW15D



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



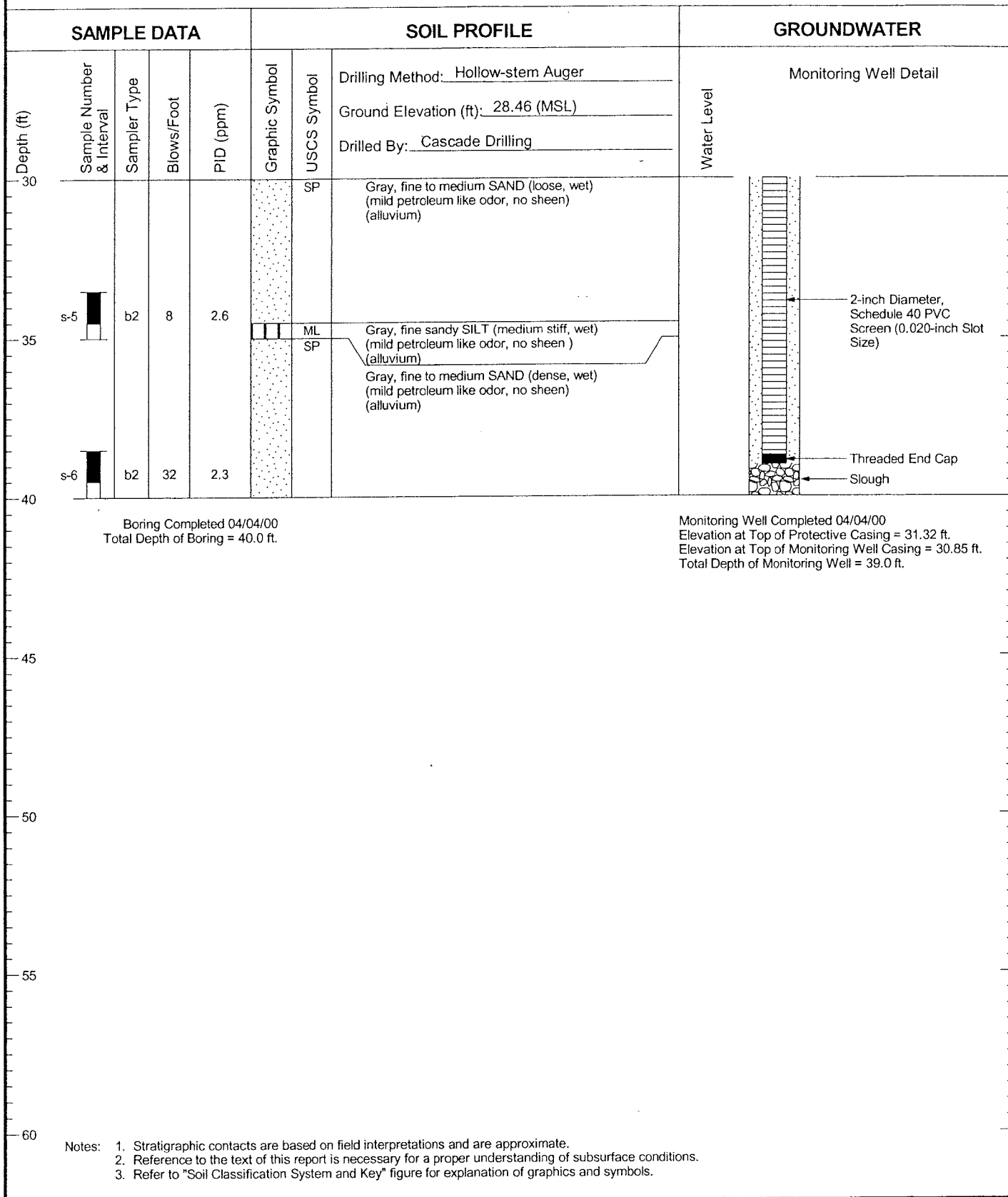
Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW15D

Figure
A-
(1 of 2)

BZTO104(e)023254

LW15D



231001.112 12/3/04 I:\MODELING\GINT\PROJECTS\231001.GPJ WELL LOG



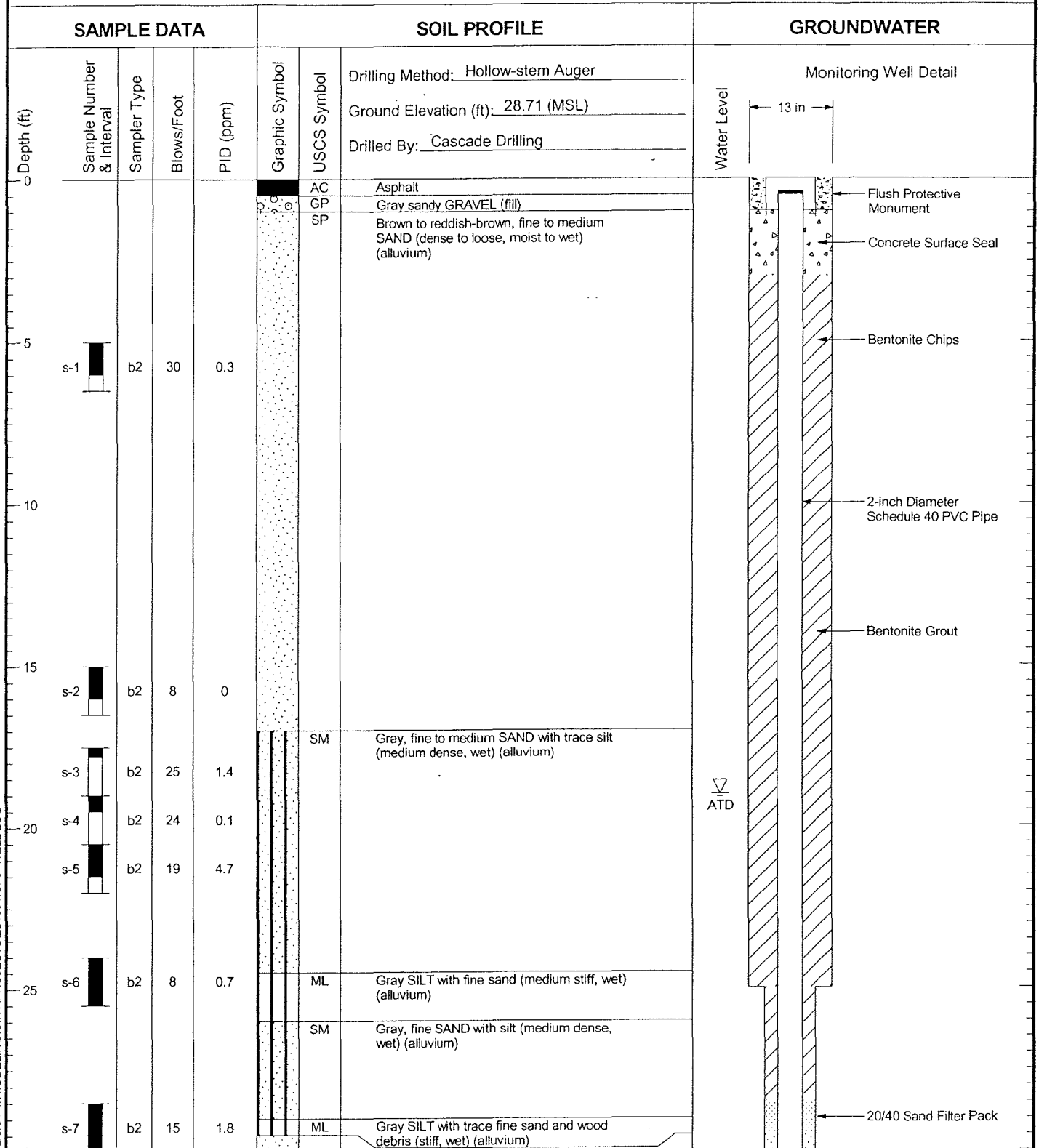
Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW15D

Figure
A-
(2 of 2)

BZTO104(e)023255

LW16D



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231001.112 12/3/04 I:\MODELING\GINT\PROJECTS\231001.GPJ WELL LOG



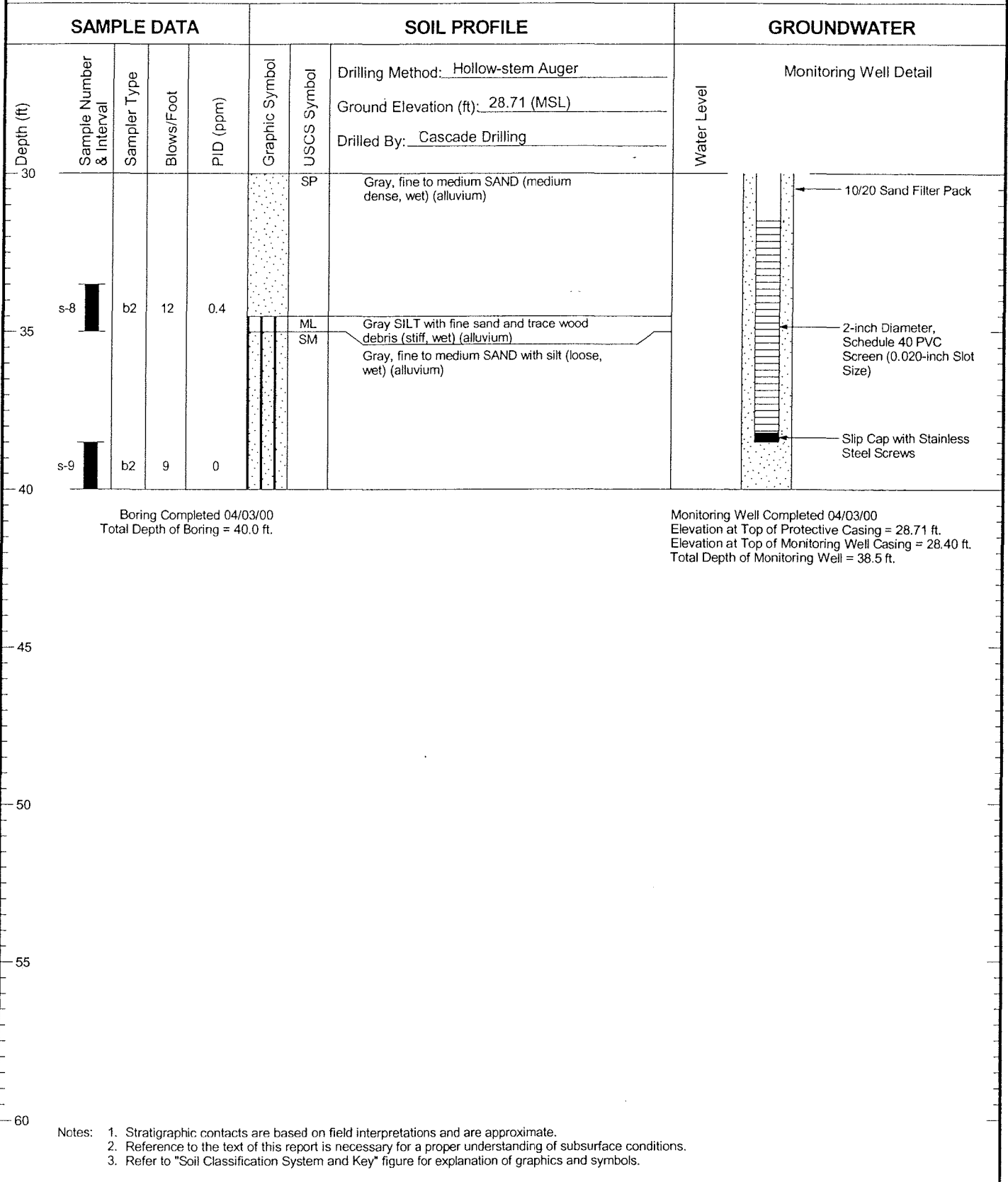
Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW16D

Figure
A-
(1 of 2)

BZTO104(e)023256

LW16D



231001.112 12/3/04 I:\MODELING\GINT\PROJECTS\231001.GPJ WELL LOG



LANDAU
ASSOCIATES

Time Oil - NW Terminal
Portland, OR

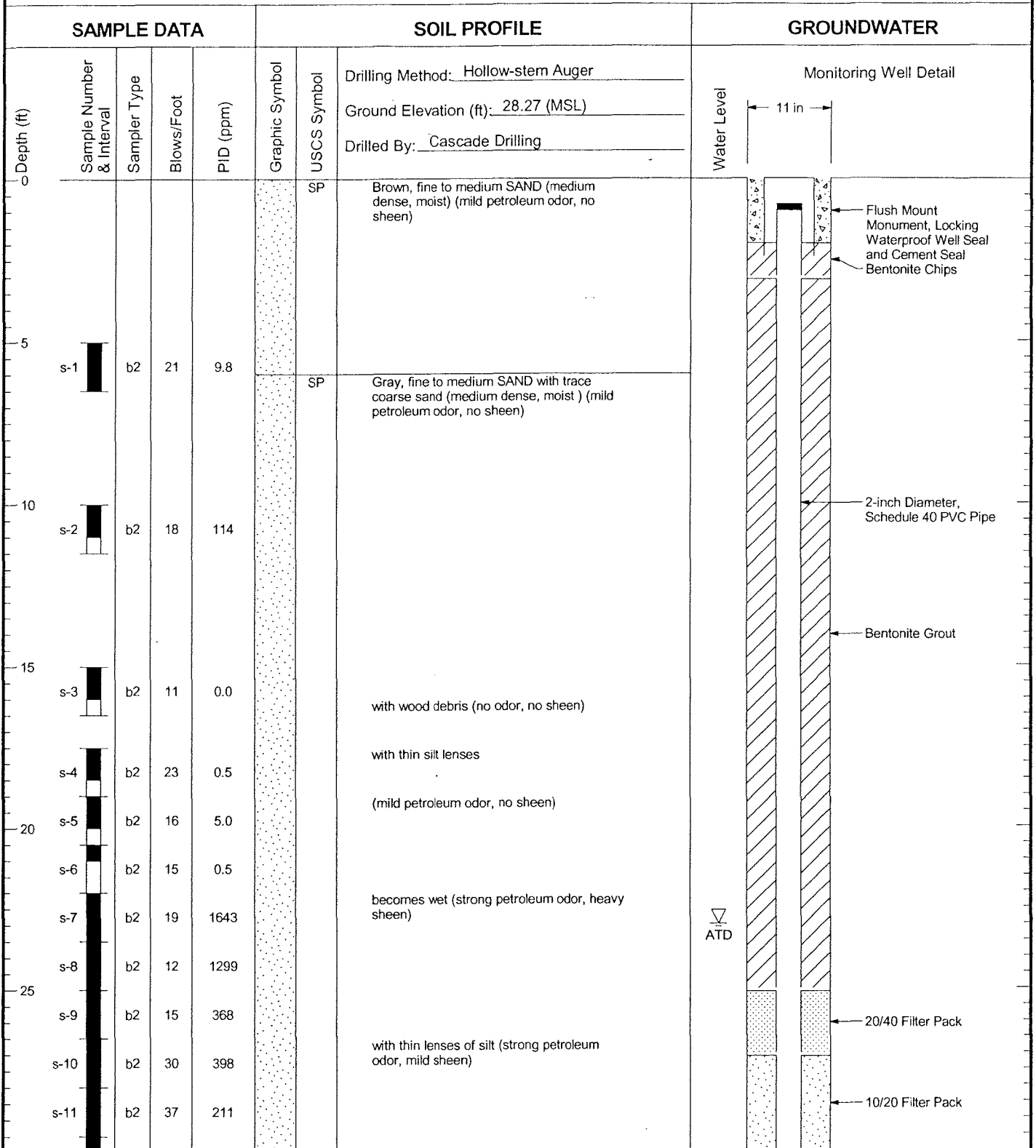
Log of Monitoring Well LW16D

Figure

A-
(2 of 2)

BZTO104(e)023257

LW17D



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW17D

Figure
A-
(1 of 2)

LW17D

SAMPLE DATA					SOIL PROFILE			GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow-stem Auger</u>	Water Level	Monitoring Well Detail
							Ground Elevation (ft): <u>28.27 (MSL)</u>		
							Drilled By: <u>Cascade Drilling</u>		
30	s-12	b2	20	131		SP	Gray, fine to medium SAND with trace coarse sand (medium dense, moist) (mild petroleum odor, no sheen) with thin lenses of silt (mild petroleum odor, no sheen)		
	s-13	b2	24	204					
	s-14	b2	34	202					
	s-15	b2	21	60.7					
35	s-16	b2	21	116					
	s-17	b2	20	177					
	s-18	b2	19	305					
40									

Boring Completed 08/24/00
Total Depth of Boring = 40.0 ft.

Monitoring Well Completed 08/24/00
Total Depth of Monitoring Well = 40.0 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231001.115 12/3/04 I:\MODELING\GINT\PROJECTS\231001.GPJ WELL LOG



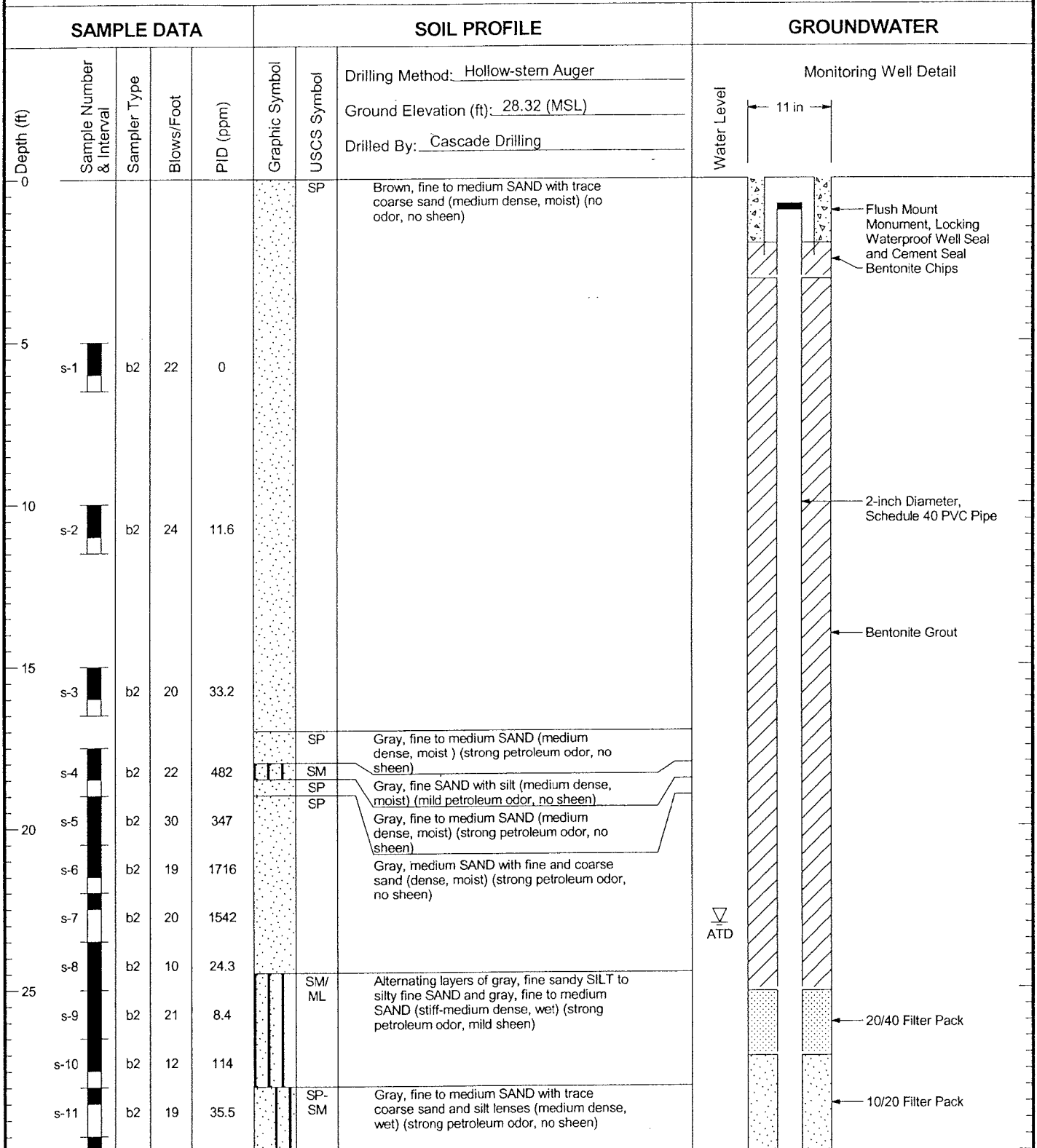
Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW17D

Figure
A-
(2 of 2)

BZTO104(e)023259

LW18D



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW18D

Figure
A-
(1 of 2)

LW18D

SAMPLE DATA					SOIL PROFILE		GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow-stem Auger</u>	Monitoring Well Detail
							Ground Elevation (ft): <u>28.32 (MSL)</u>	
							Drilled By: <u>Cascade Drilling</u>	
30	s-12	b2	22	27.1		SP-SM	Gray, fine to medium SAND with trace coarse sand and silt lenses (medium dense, wet) (strong petroleum odor, no sheen) with 2-inch lense of silt	<p>2-inch Diameter, Schedule 40 PVC Screen (0.020-inch Slot Size)</p> <p>Threaded End Cap</p>
	s-13	b2	22	33.3				
	s-14	b2	15	73.0			with 3-inch lense of silt	
35	s-15	b2	12	22.7			with 2-inch lense of silt	
	s-16	b2	8	33.7				
	s-17	b2	52	43.8				
	s-18	b2	50	22.4				
40								

Boring Completed 08/24/00
Total Depth of Boring = 40.0 ft.

Monitoring Well Completed 08/24/00
Total Depth of Monitoring Well = 40.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



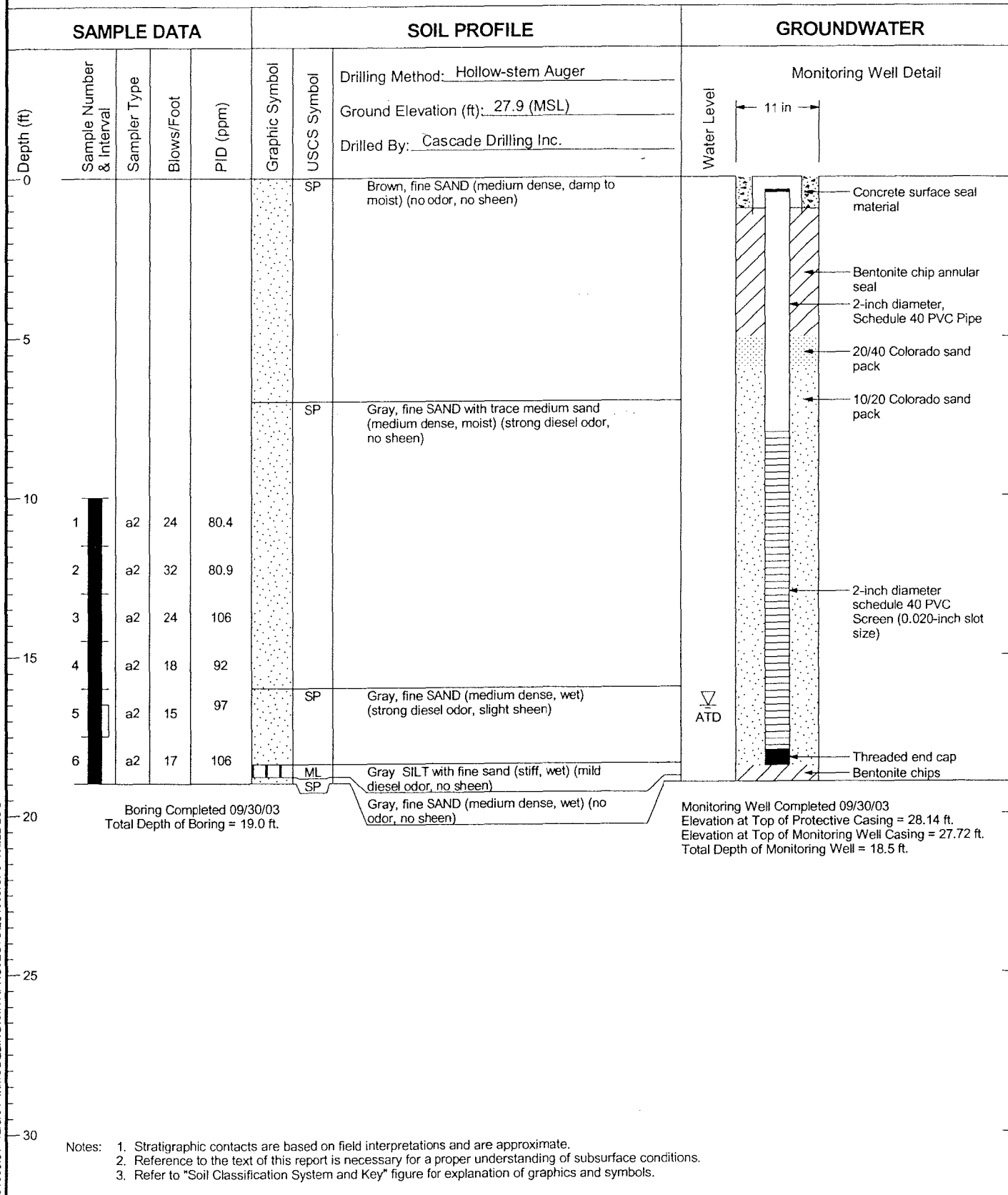
Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well LW18D

Figure

A-
(2 of 2)

LW19S

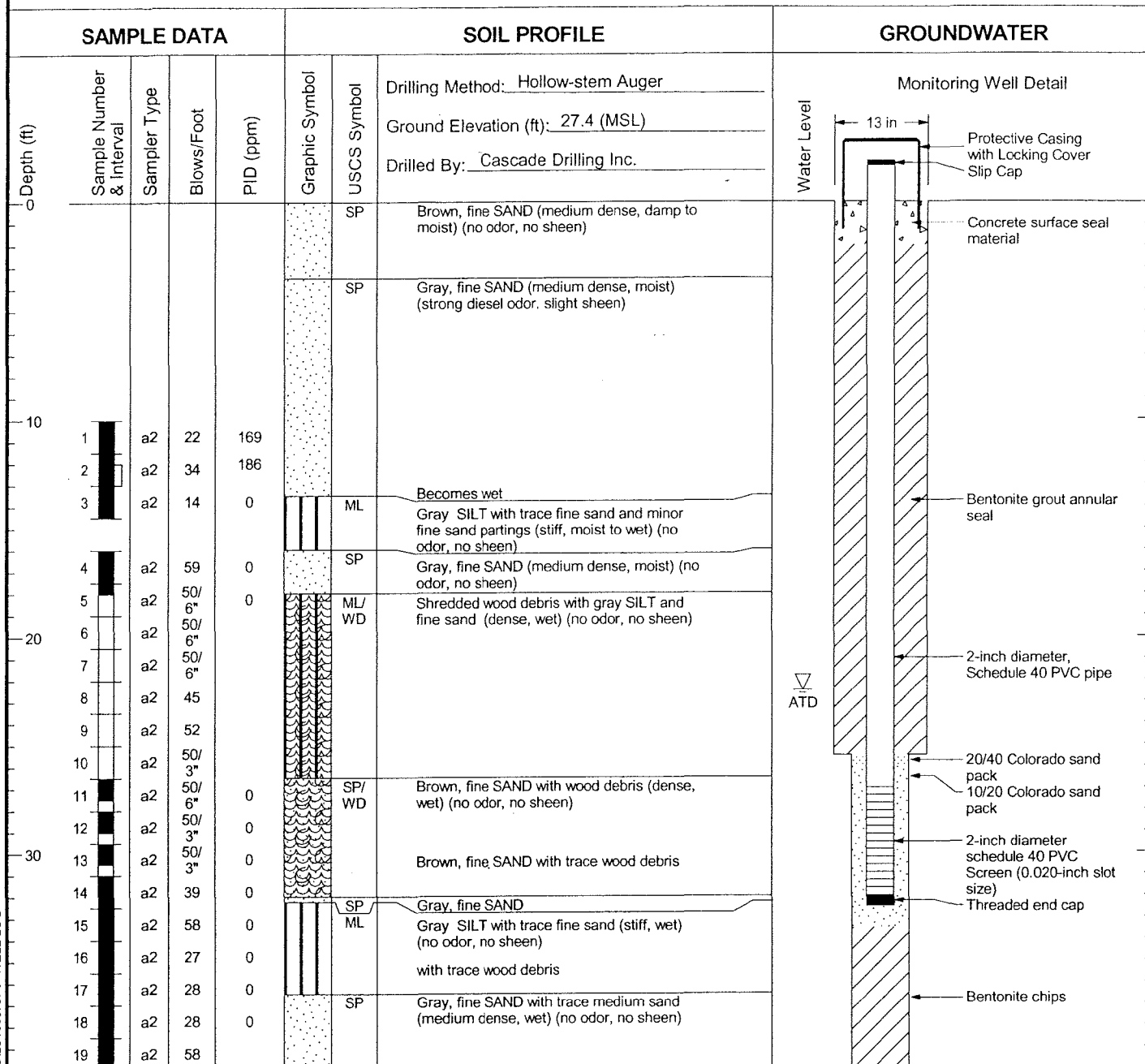


Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW19S

Figure
A-

LW20D



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

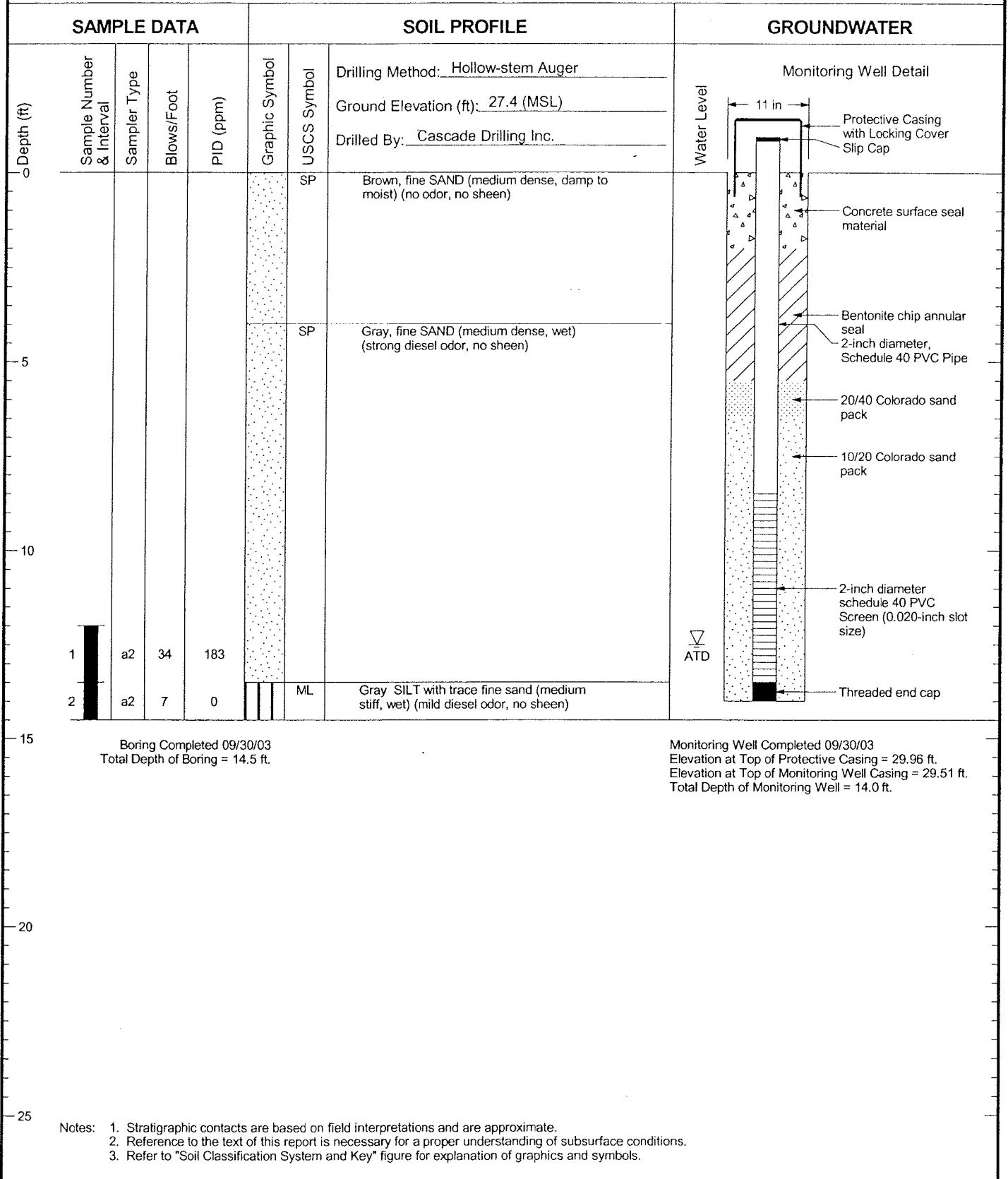


Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW20D

Figure
A-

LW20S

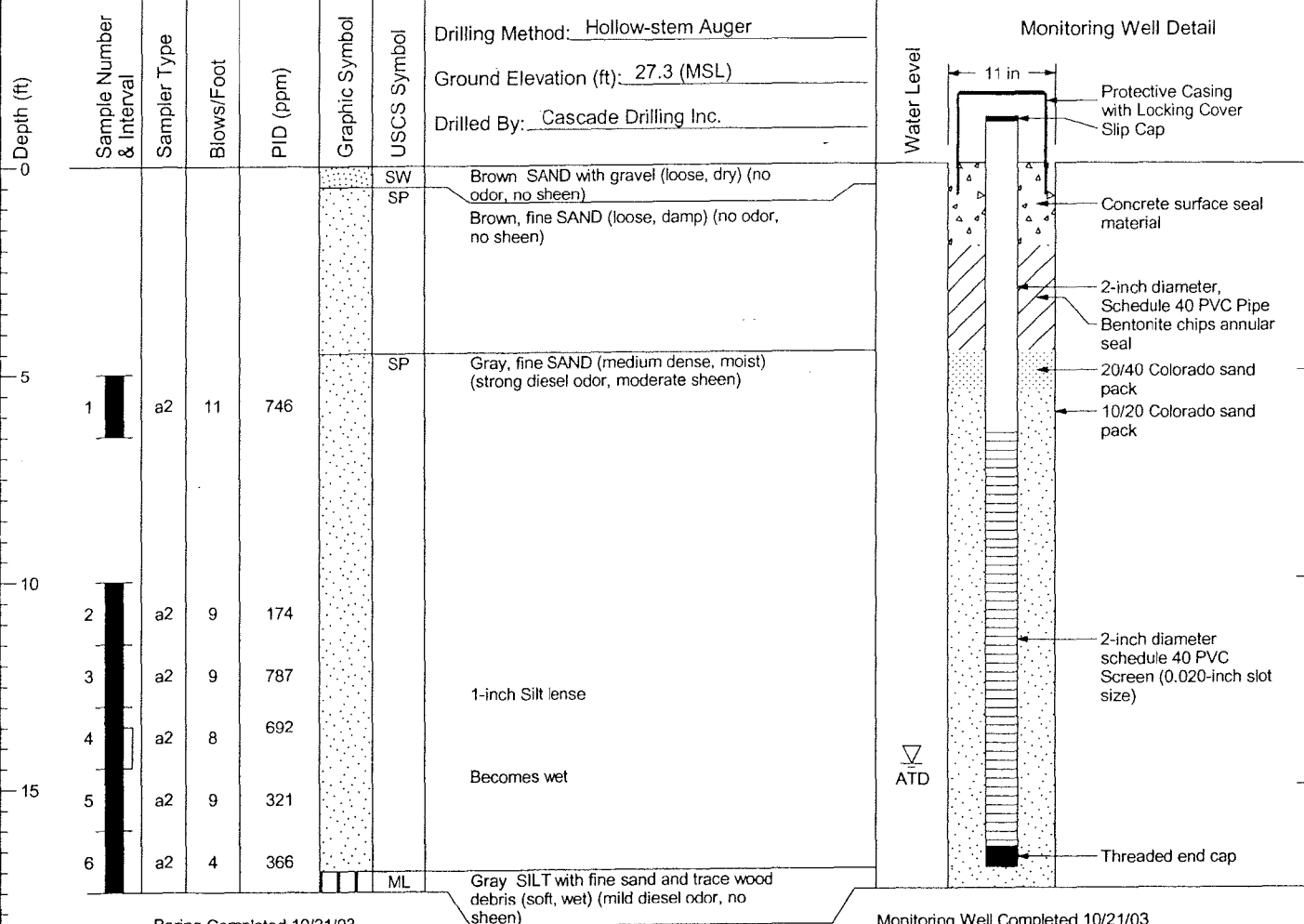


LW21S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure

A-

Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW21S



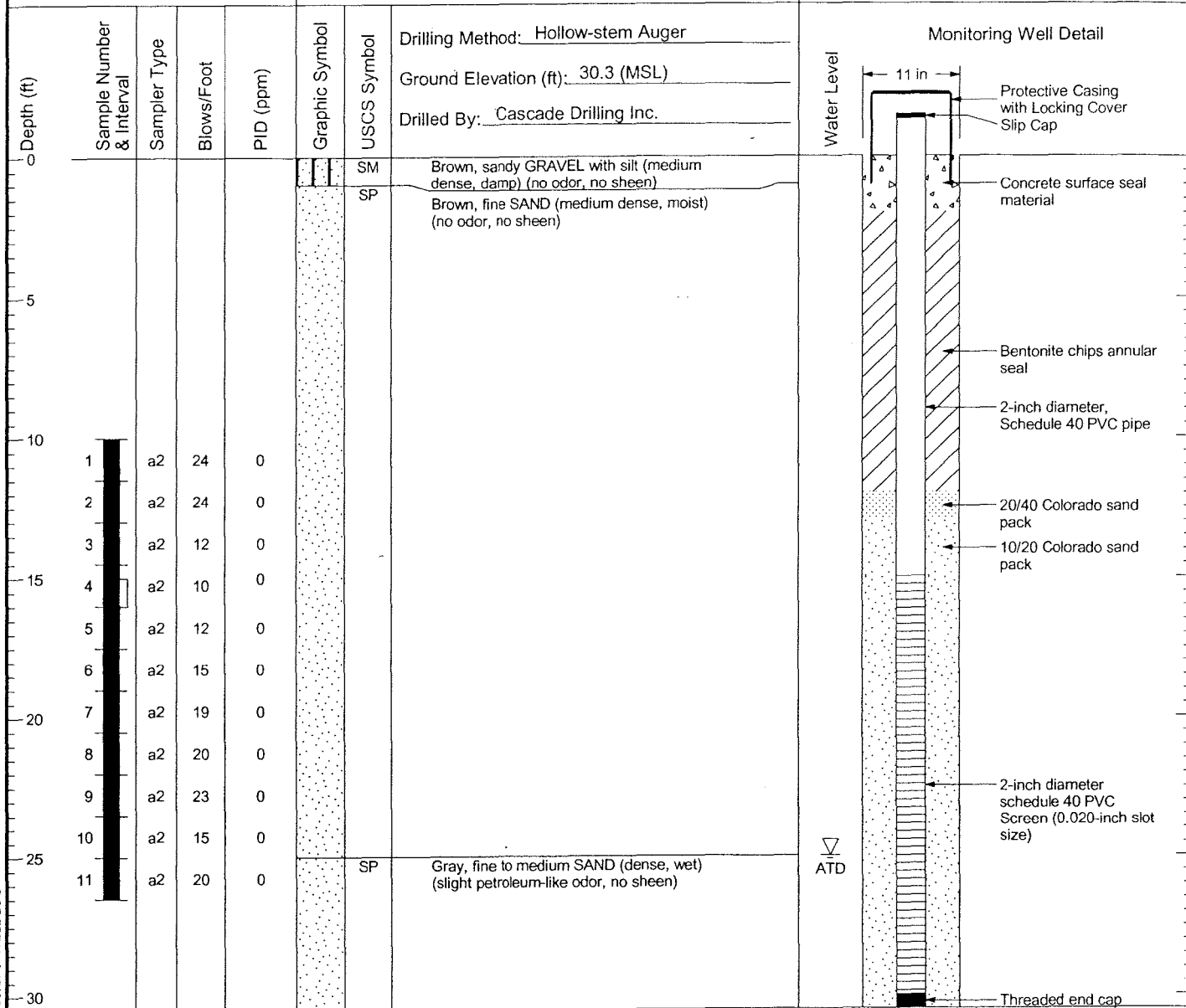
BZTO104(e)023265

LW22D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 09/24/03
Total Depth of Boring = 30.5 ft.

Monitoring Well Completed 09/24/03
Elevation at Top of Protective Casing = 32.87 ft.
Elevation at Top of Monitoring Well Casing = 32.56 ft.
Total Depth of Monitoring Well = 30.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure

A-

Time Oil NW Terminal
Portland, Oregon

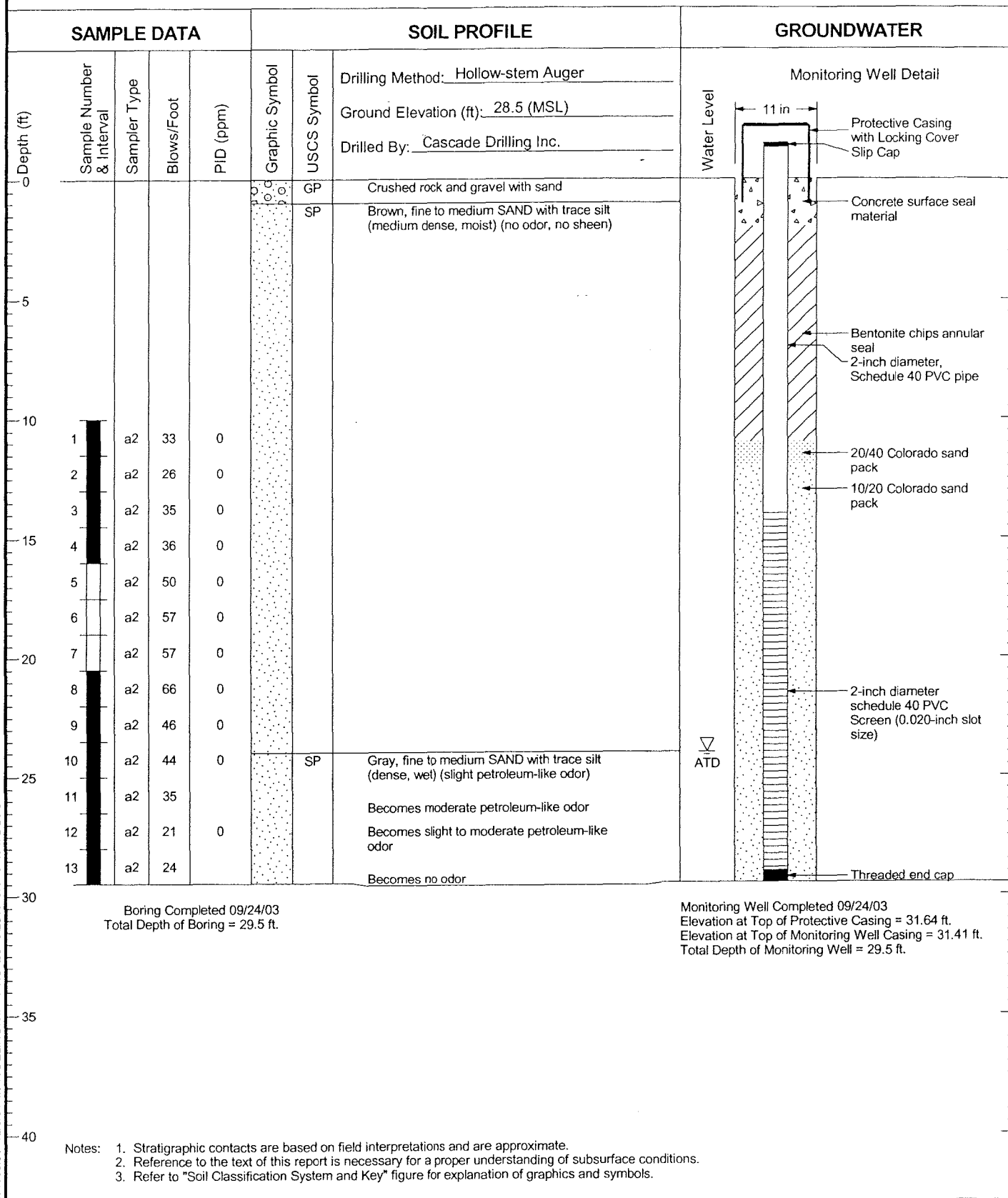
Log of Monitoring Well LW22D



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BZTO104(e)023266

LW23D

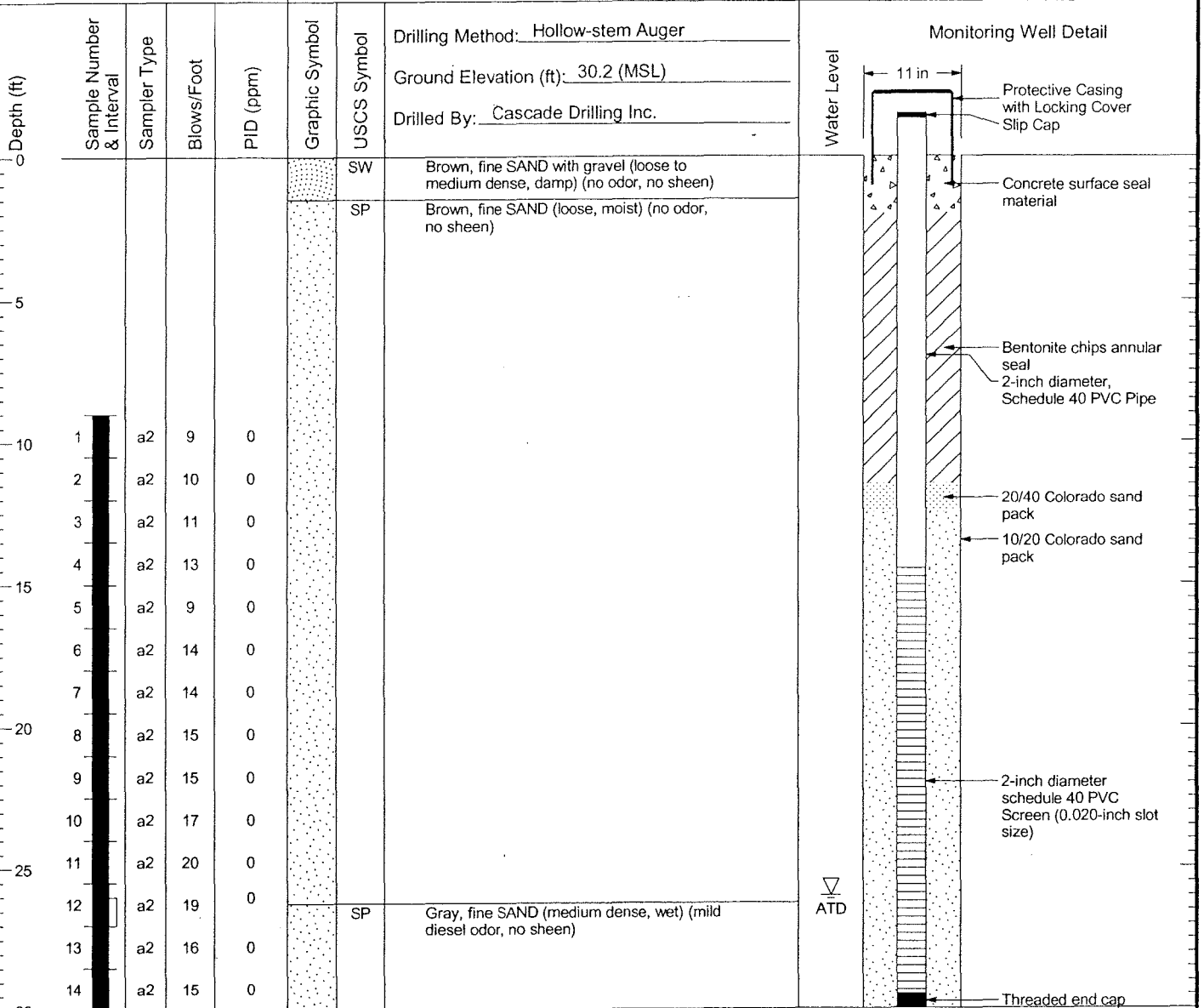


LW24D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



231009.31 12/3/04 I:\MODELING\GINT\PROJECTS\231009.GPJ WELL LOG



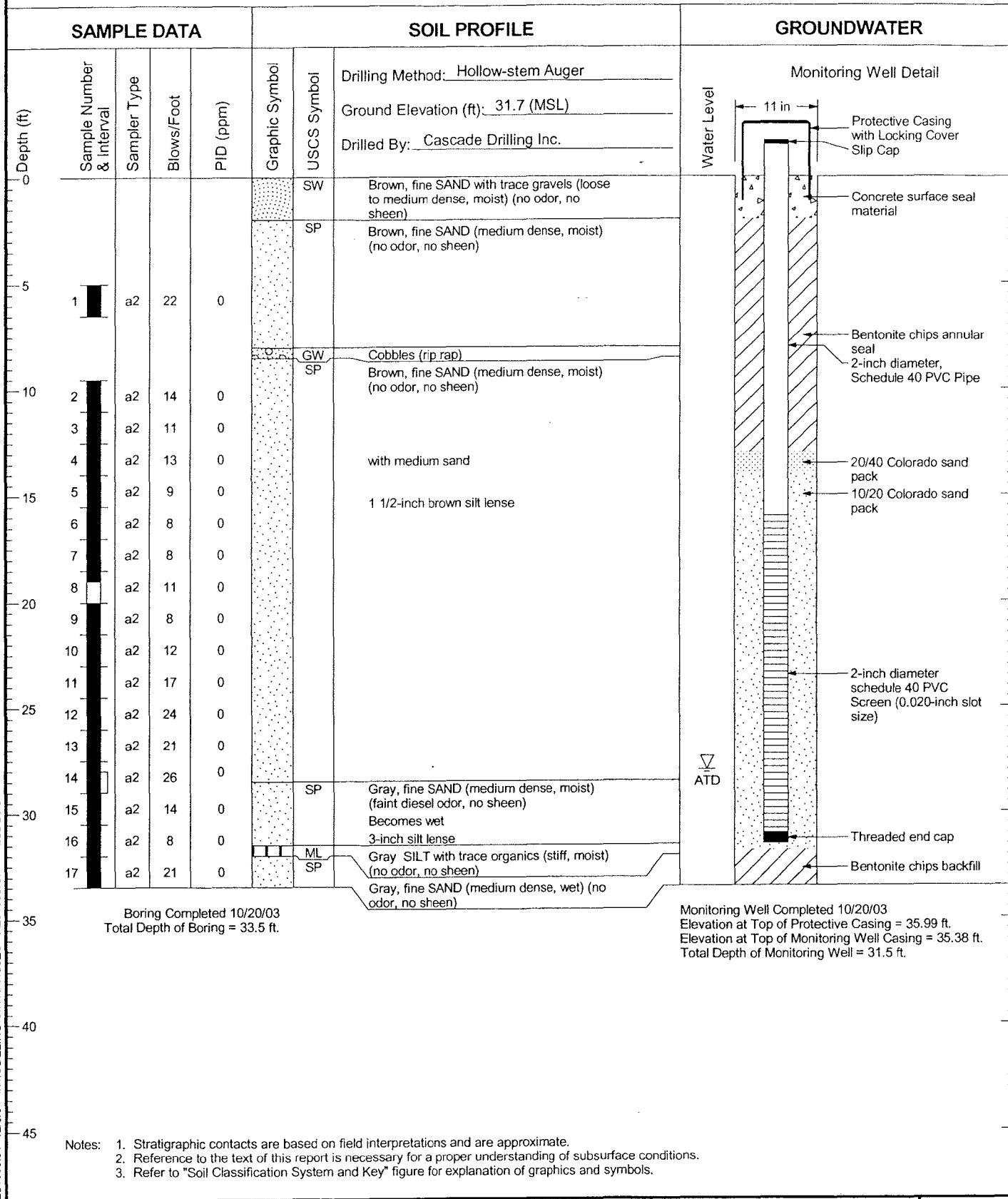
Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW24D

Figure
A-

BZTO104(e)023268

LW25D



Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW25D

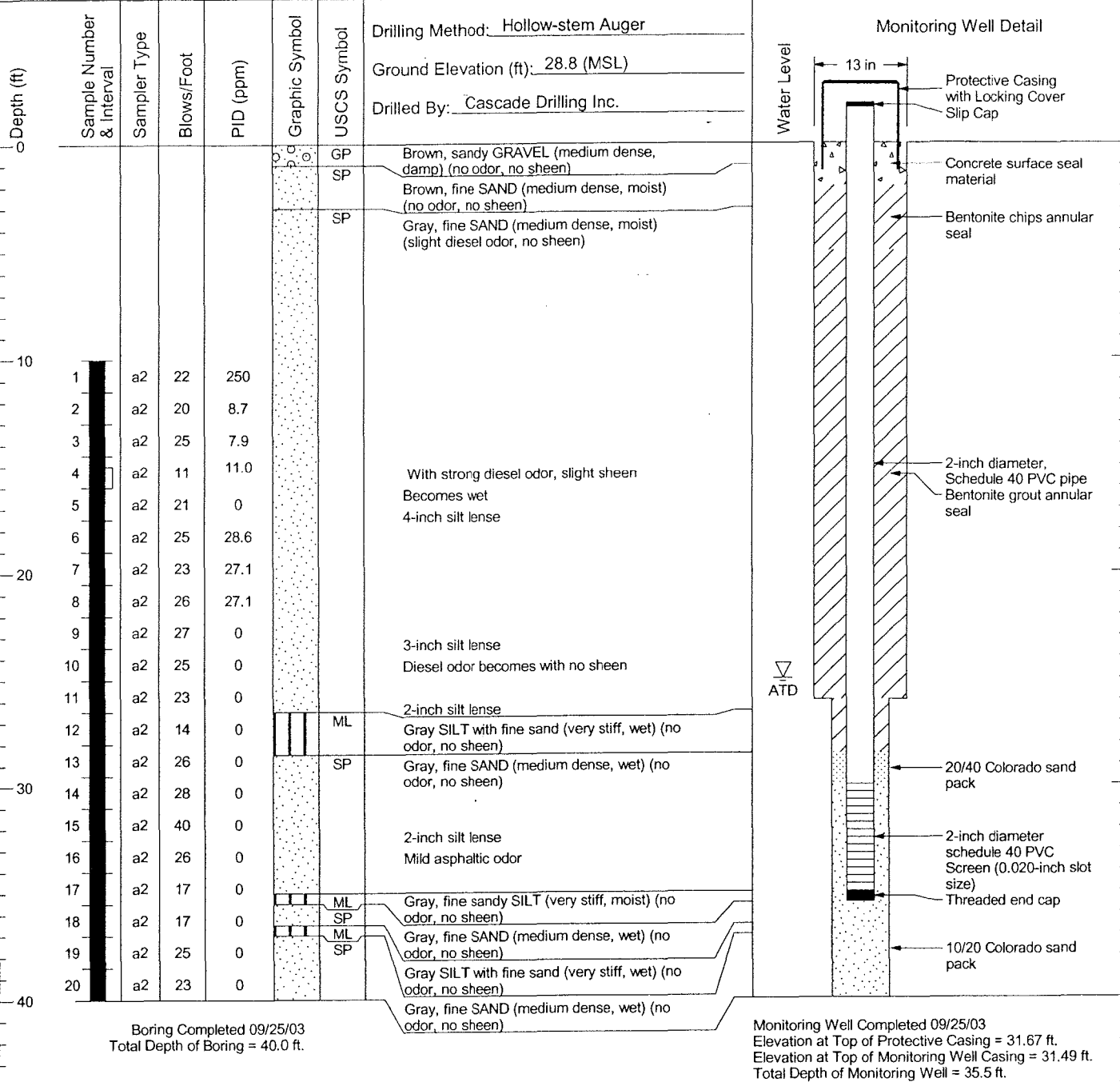
Figure
A-

LW26D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



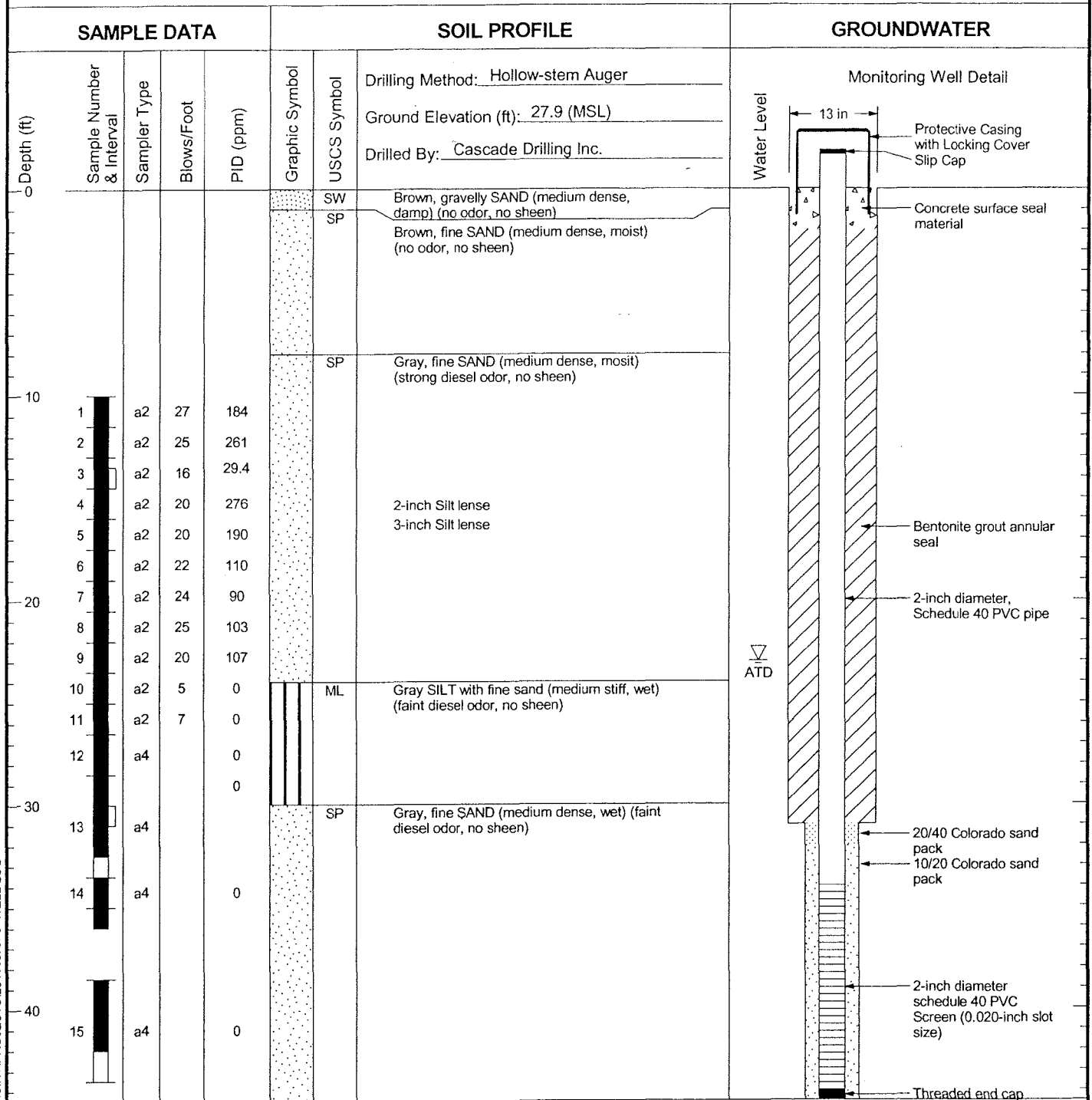
Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW26D

Figure
A-

BZTO104(e)023270

LW27D



Boring Completed 09/26/03
Total Depth of Boring = 44.5 ft.

Monitoring Well Completed 09/26/03
Elevation at Top of Protective Casing = 30.21 ft.
Elevation at Top of Monitoring Well Casing = 29.71 ft.
Total Depth of Monitoring Well = 44.5 ft.

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

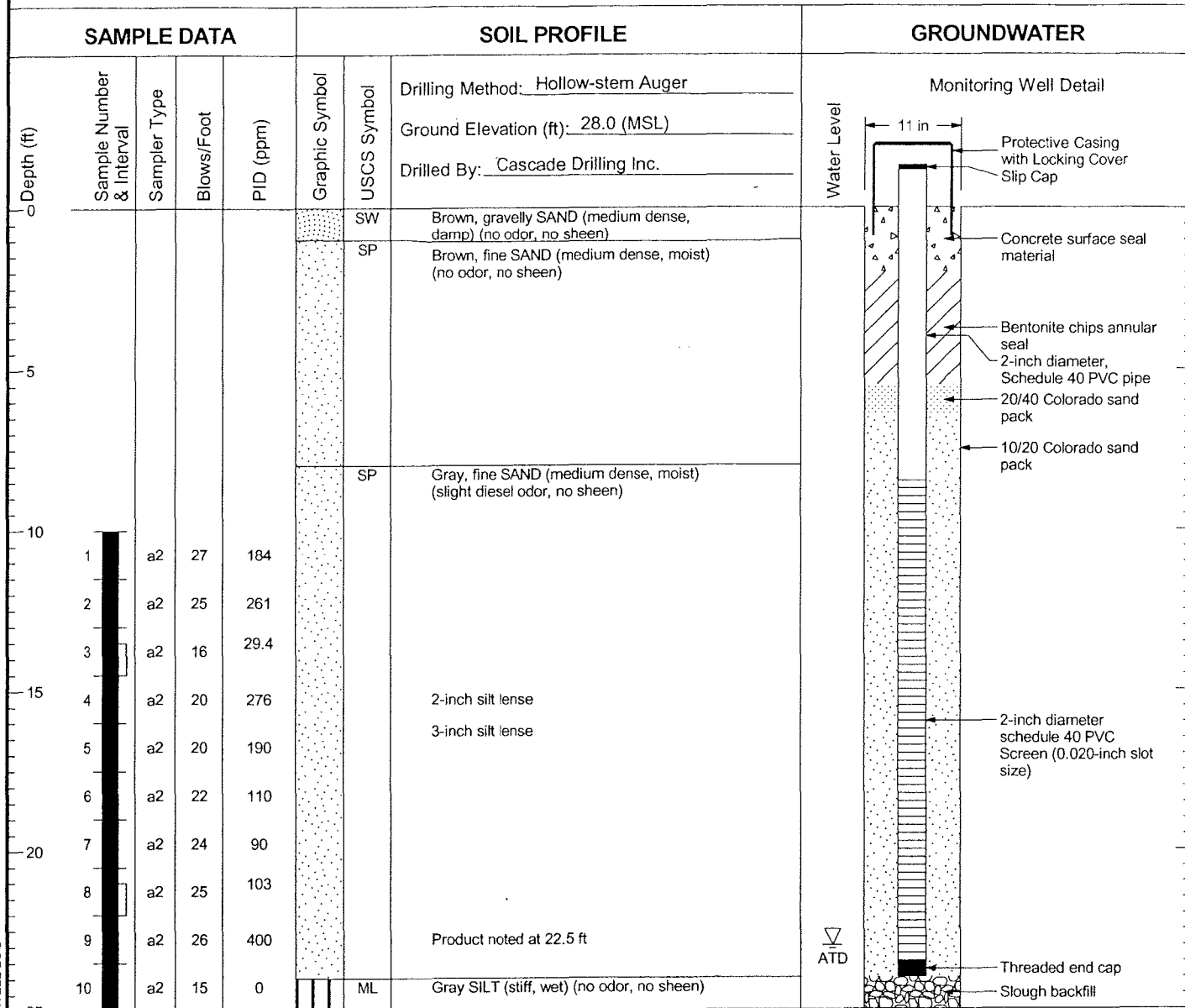


Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW27D

Figure
A-

LW27S



Boring Completed 09/26/03
Total Depth of Boring = 25.0 ft.

Monitoring Well Completed 09/26/03
Elevation at Top of Protective Casing = 30.92 ft.
Elevation at Top of Monitoring Well Casing = 30.59 ft.
Total Depth of Monitoring Well = 24.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW27S

Figure
A-

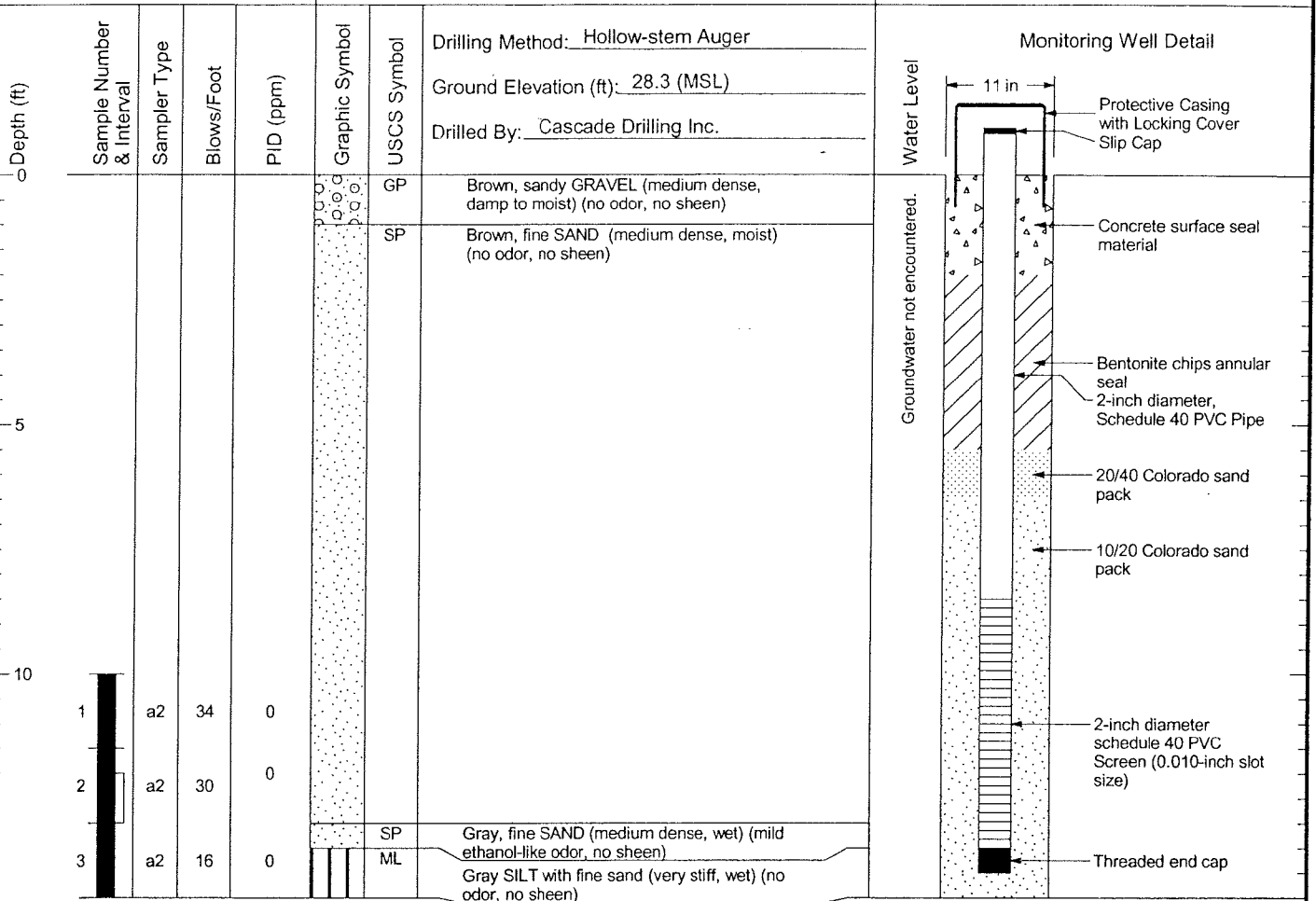
BZTO104(e)023272

LW28S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW28S

Figure
A-

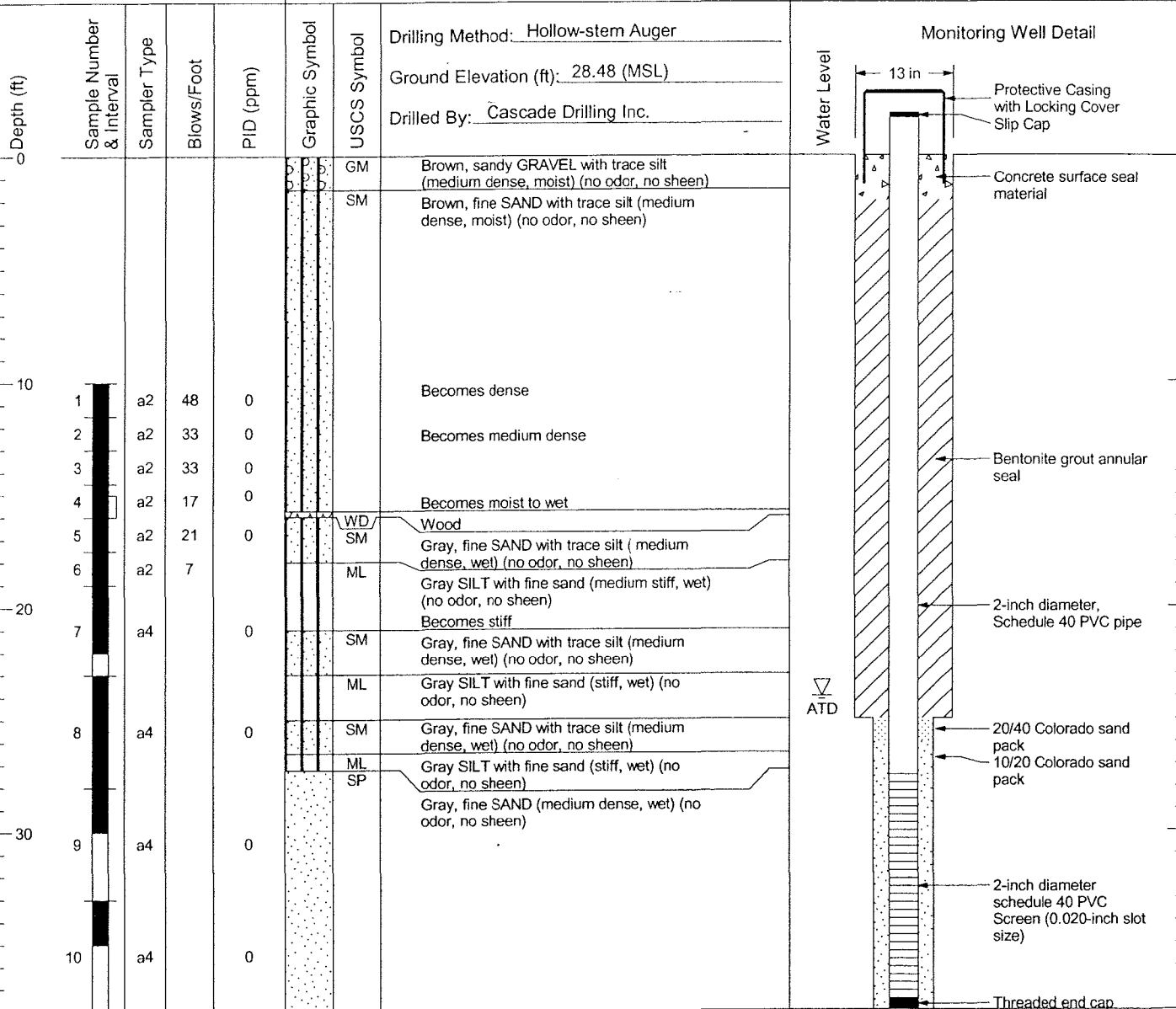
BZTO104(e)023273

LW29D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



231009.31 12/3/04 I:\MODELING\GINT\PROJECTS\231009.GPJ WELL LOG



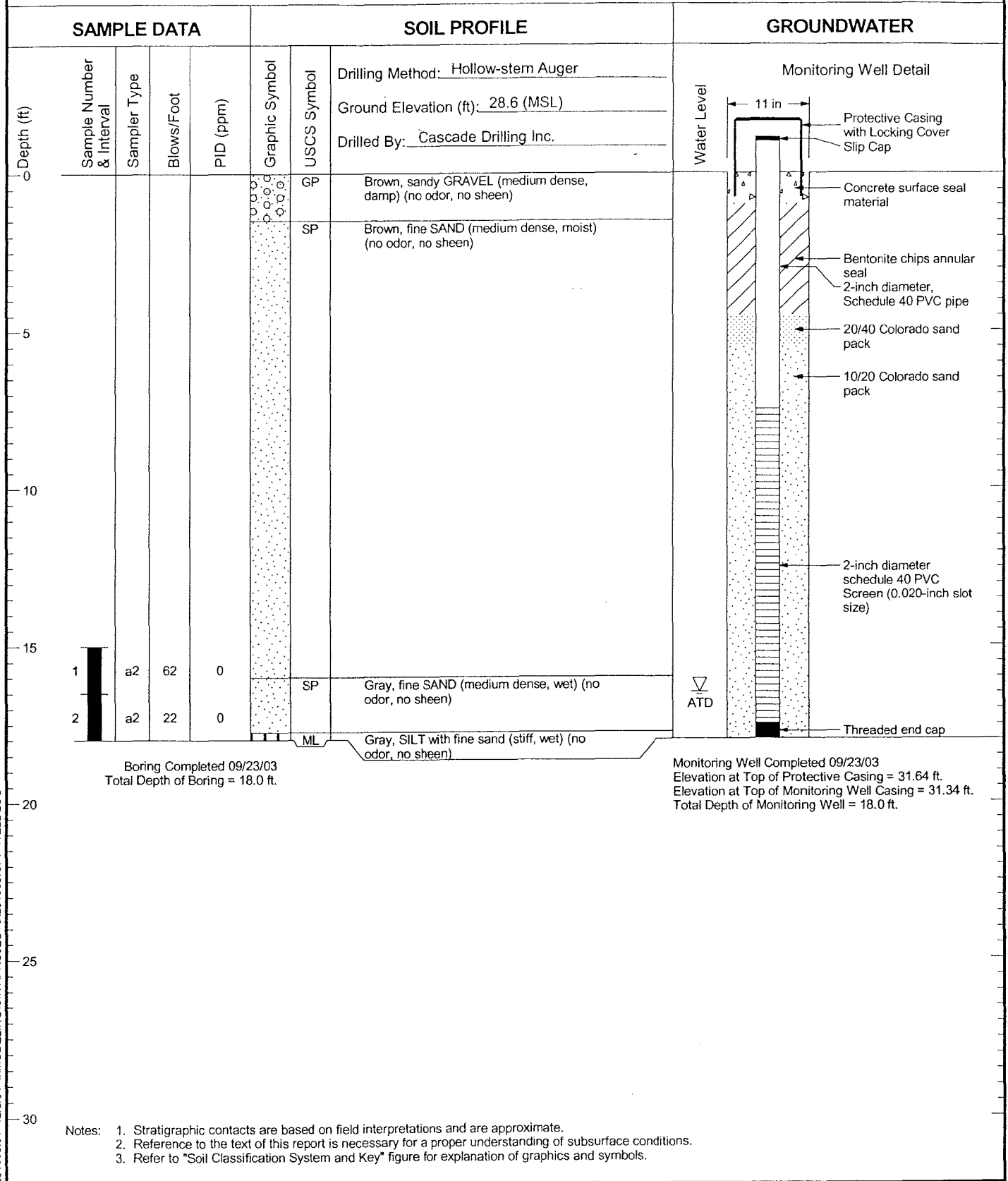
Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW29D

Figure
A-

BZTO104(e)023274

LW29S



231009.31 12/3/04 I:\MODELING\GINT\PROJECTS\231009.GPJ WELL LOG



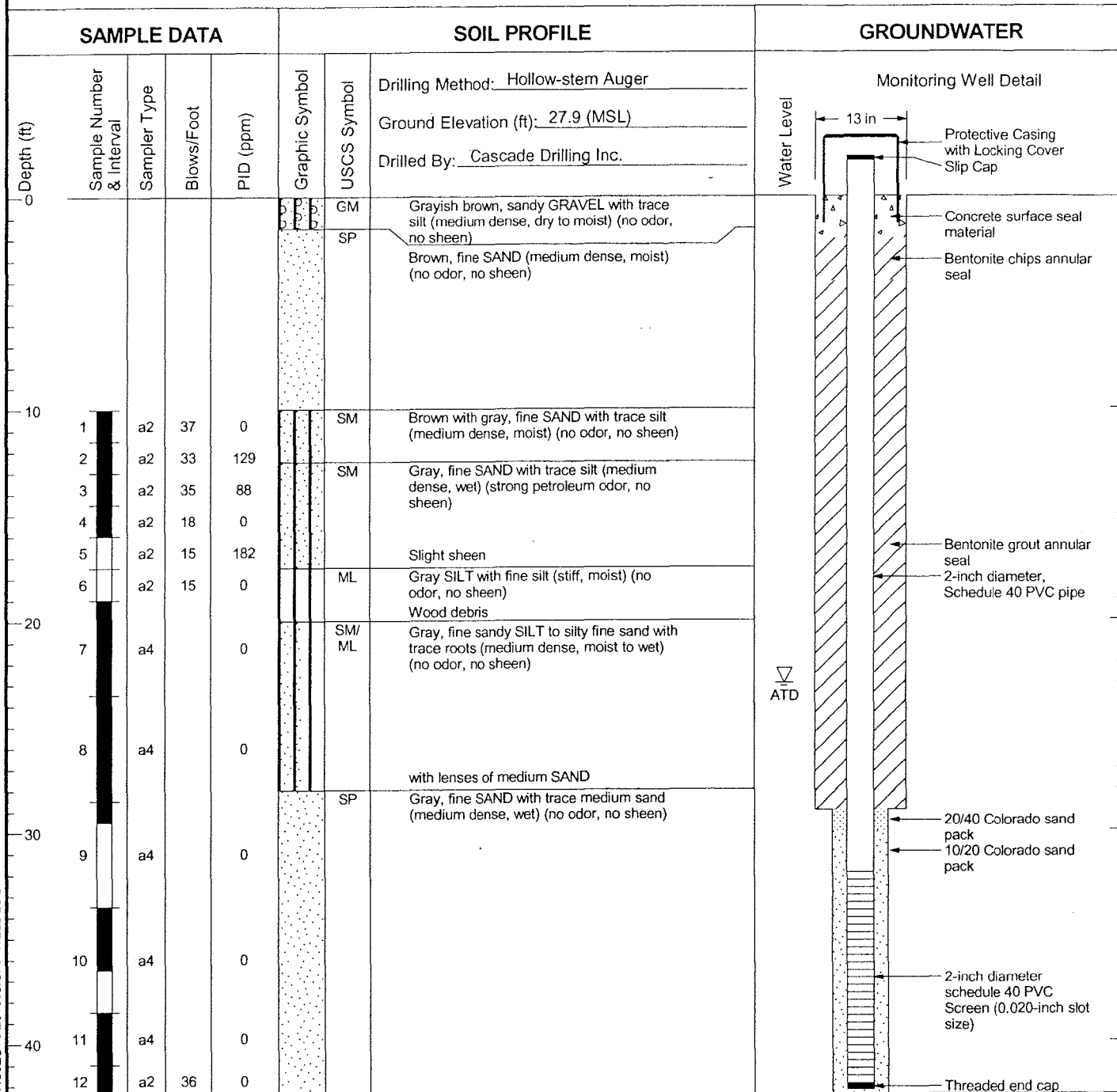
Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW29S

Figure
A-

BZTO104(e)023275

LW30D



Boring Completed 09/18/03
Total Depth of Boring = 42.5 ft.

Monitoring Well Completed 09/22/03
Elevation at Top of Protective Casing = 30.58 ft.
Elevation at Top of Monitoring Well Casing = 30.06 ft.
Total Depth of Monitoring Well = 42.3 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231009.31 12/3/04 I:\MODELING\INT\PROJECTS\231009.GPJ WELL LOG



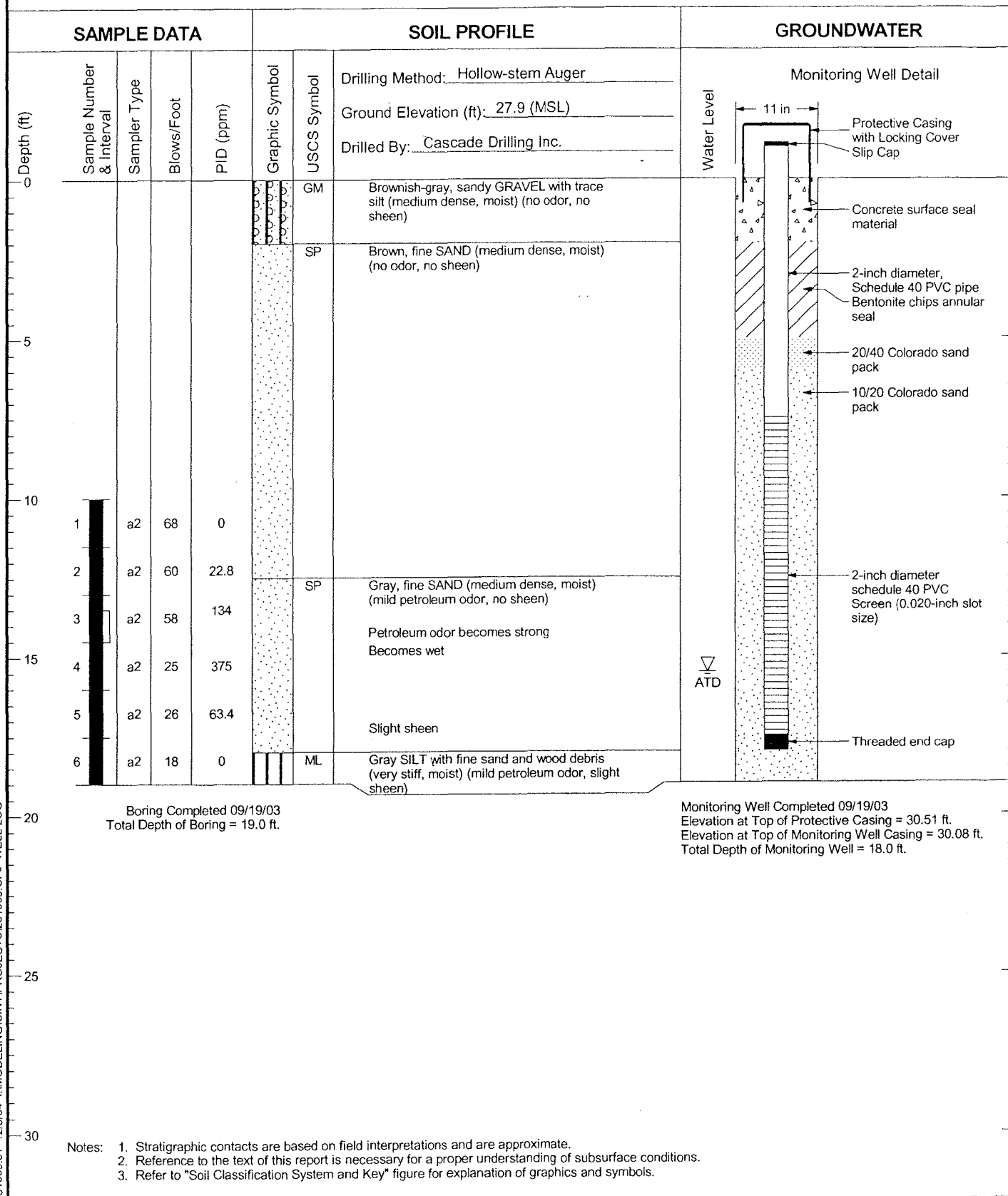
Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW30D

Figure
A-

BZTO104(e)023276

LW30S



Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW30S

Figure
A-

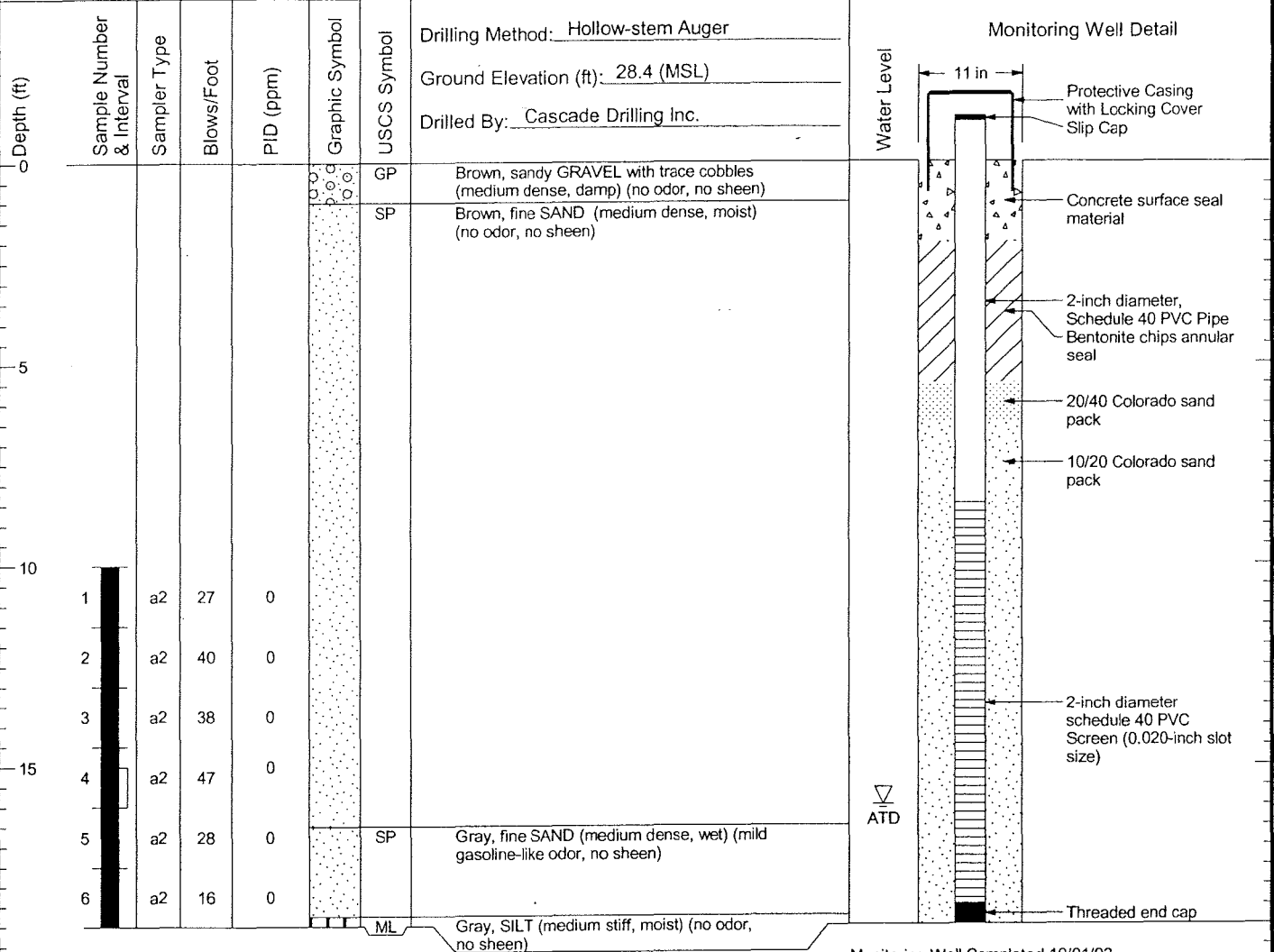
BZTO104(e)023277

LW31S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW31S

Figure
A-

BZTO104(e)023278

LW32D

SAMPLE DATA					SOIL PROFILE			GROUNDWATER		
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID (ppm)	Graphic Symbol	USCS Symbol	Monitoring Well Detail			
							Drilling Method: Hollow-stem Auger	Ground Elevation (ft): 28.2 (MSL)		
							Drilled By: Cascade Drilling Inc.			
0						GP	Brown, sandy GRAVEL with 1/2-inch green sand at 0.2-inch depth with small pieces of metal (possibly spent welding rods) (medium dense, moist) (no odor, no sheen)			
						SP	Brown, fine SAND (medium dense, moist) (no odor, no sheen)			
10	1	a2	20	0		SP	Gray, fine SAND (medium dense, wet) (strong diesel odor, slight sheen)			
	2	a2	20	0			Moderate sheen			
	3	a2	16	186			Strong sheen			
	4	a2	21	64			Gray, fine SAND with trace wood			
	5	a2	9	0					ML	Gray SILT with fine sand (stiff, wet) (no odor, no sheen)
	6	a2	17	0						Mild diesel odor
20	7	a2	50/2"			WD	Gray, fine SAND with trace wood			
	8	a2	12	0		SM	Gray, silty fine SAND (dense, wet) (no odor, no sheen)			
	9	a2	22	0					SM/ML	Alternating lenses of gray SILT and gray fine SAND with silt approximately 2-inch thick (dense, wet) (no odor, no sheen)
	10	a2	16	0						Gray, fine SAND with 2-inch lense of gray silt with wood debris (medium dense, wet) (no odor, no sheen)
	11	a2	25	0		SM/ML	Gray, fine sandy SILT with trace organics (dense, wet) (no odor, no sheen)			
	12	a2	43	0			Gray, fine sandy SILT with trace organics (dense, wet) (no odor, no sheen)			
30	13	a2	49	0		SM/ML	Gray, fine sandy SILT with trace organics (dense, wet) (no odor, no sheen)			
	14	a2	30	0						
	15	a2	27	0						
	16	a2	36	0						
	17	a2	22	0						
	18	a2	32	0						
	19	a2	36	0						

Boring Completed 10/02/03
Total Depth of Boring = 39.0 ft.

Monitoring Well Completed 10/02/03
Elevation at Top of Protective Casing = 31.06 ft.
Elevation at Top of Monitoring Well Casing = 30.86 ft.
Total Depth of Monitoring Well = 34.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW32D

Figure
A-

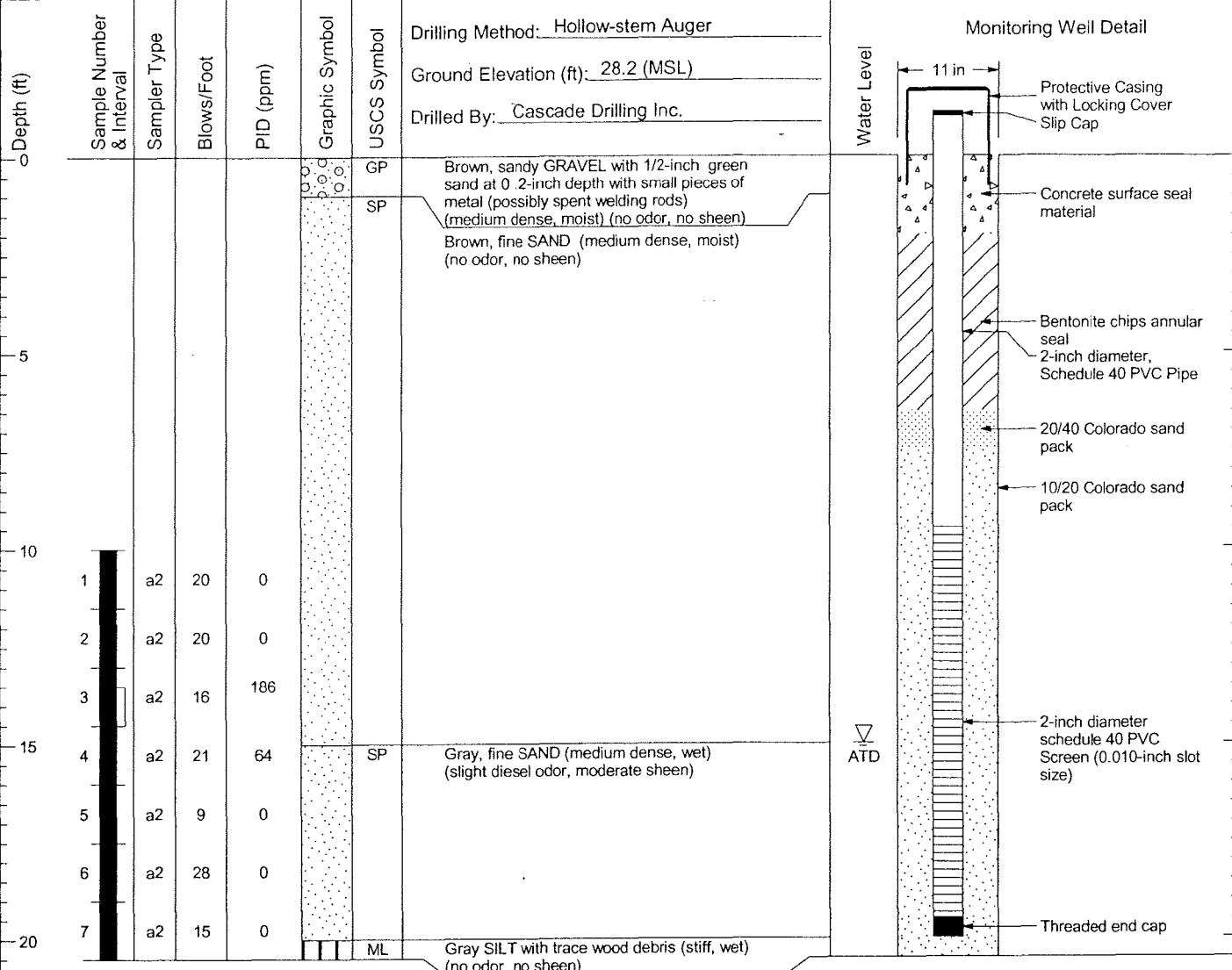
BZTO104(e)023279

LW32S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 10/02/03
Total Depth of Boring = 20.5 ft.

Monitoring Well Completed 10/02/03
Elevation at Top of Protective Casing = 30.93 ft.
Elevation at Top of Monitoring Well Casing = 30.71 ft.
Total Depth of Monitoring Well = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure

A-

Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW32S



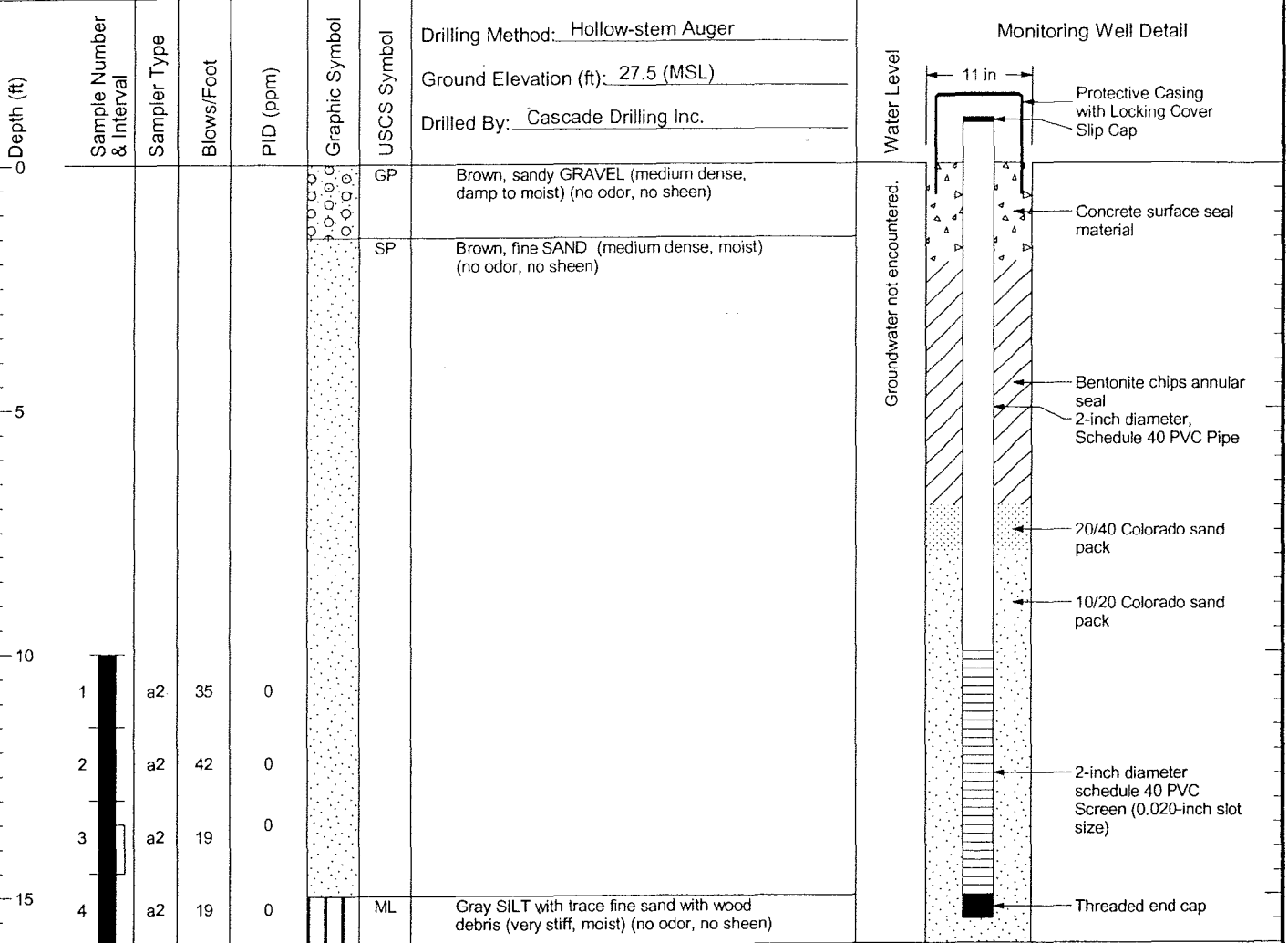
BZTO104(e)023280

LW33S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 10/02/03
Total Depth of Boring = 16.0 ft.

Monitoring Well Completed 10/02/03
Elevation at Top of Protective Casing = 30.20 ft.
Elevation at Top of Monitoring Well Casing = 29.89 ft.
Total Depth of Monitoring Well = 15.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure

A-

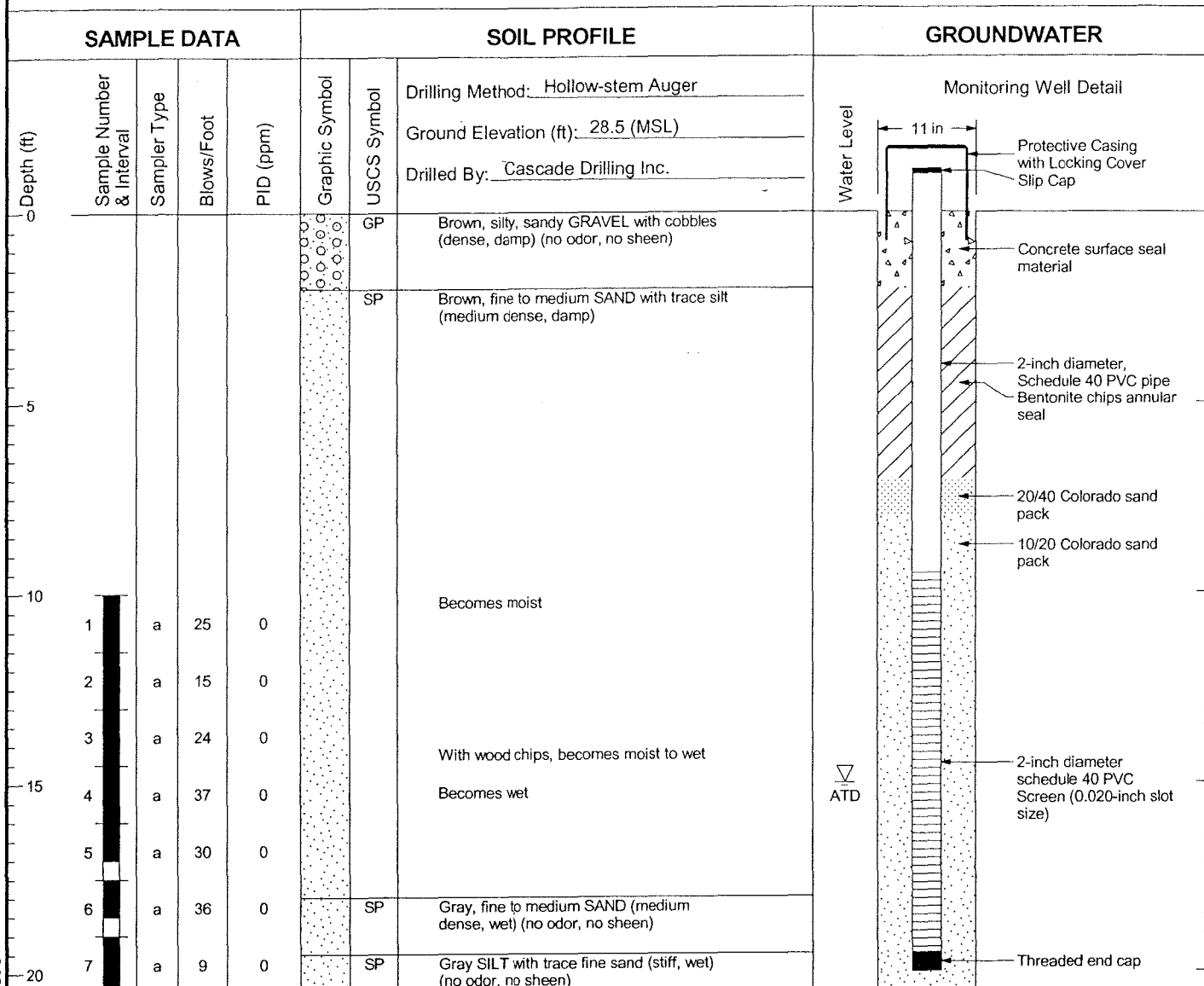


Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW33S

BZTO104(e)023281

LW34S



Boring Completed 09/18/03
Total Depth of Boring = 20.5 ft.

Monitoring Well Completed 09/18/03
Elevation at Top of Protective Casing = 31.25 ft.
Elevation at Top of Monitoring Well Casing = 30.93 ft.
Total Depth of Monitoring Well = 20.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



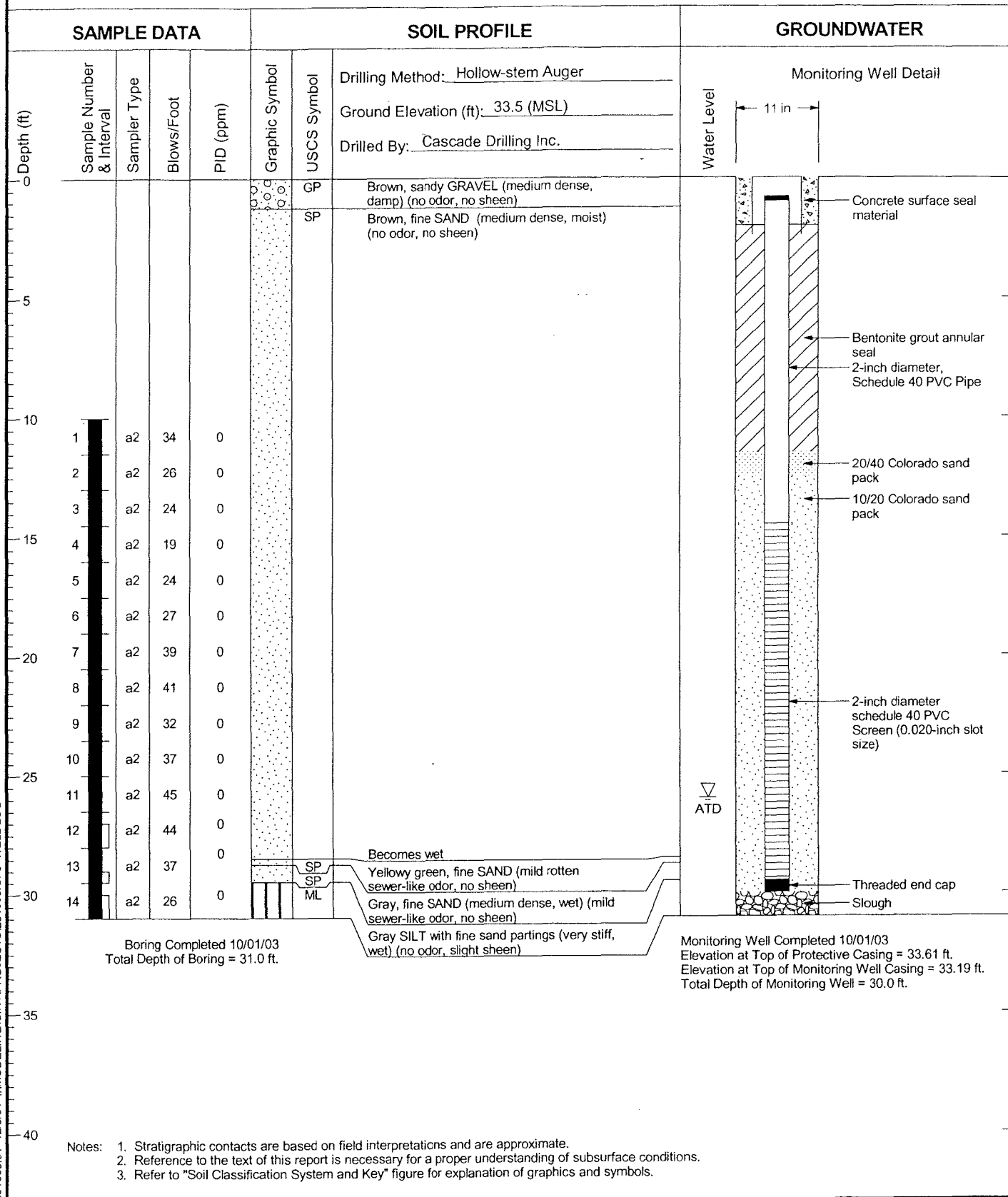
Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW34S

Figure
A-

BZTO104(e)023282

LW35D



Time Oil NW Terminal
Portland, Oregon

Log of Monitoring Well LW35D

Figure
A-

BZTO104(e)023283

LW36D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER

Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: <u>Hollow-stem Auger</u>		Monitoring Well Detail
							Ground Elevation (ft): <u>11.60</u>		
							Drilled By: <u>Cascade Drilling Inc.</u>		<div>Water Level</div> <div><div>11 in</div></div>
						SP	Brown, fine to medium SAND (medium dense, moist) (no odor, no sheen)		<div><div>Concrete surface seal</div><div>Bentonite chip annular seal</div><div>2-inch diameter, Schedule 40, PVC well casing</div><div>10/20 Colorado sand pack</div><div>ATD</div><div>2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)</div><div>Slipcap</div><div>Slough</div></div>
1	a2	21	0						
2	b2	15	0						
3	a2	11	0						
4	b2	2	0			SP	Gray, fine to medium SAND (medium dense, wet) (mild petroleum odor, no sheen)		
5	a2	11	0						
6	b2	3	0						
7	a2	3	0			SP/ML	Gray, fine sandy SILT (soft, wet) (no odor, no sheen)		
8	b2	0	0						

Boring Completed 11/02/04
Total Depth of Boring = 14.5 ft.

Monitoring Well Completed 11/02/04
Elevation at Top of Protective Casing = 11.60 ft.
Elevation at Top of Monitoring Well Casing = 11.30 ft.
Total Depth of Monitoring Well = 14.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW36D

Figure
A-

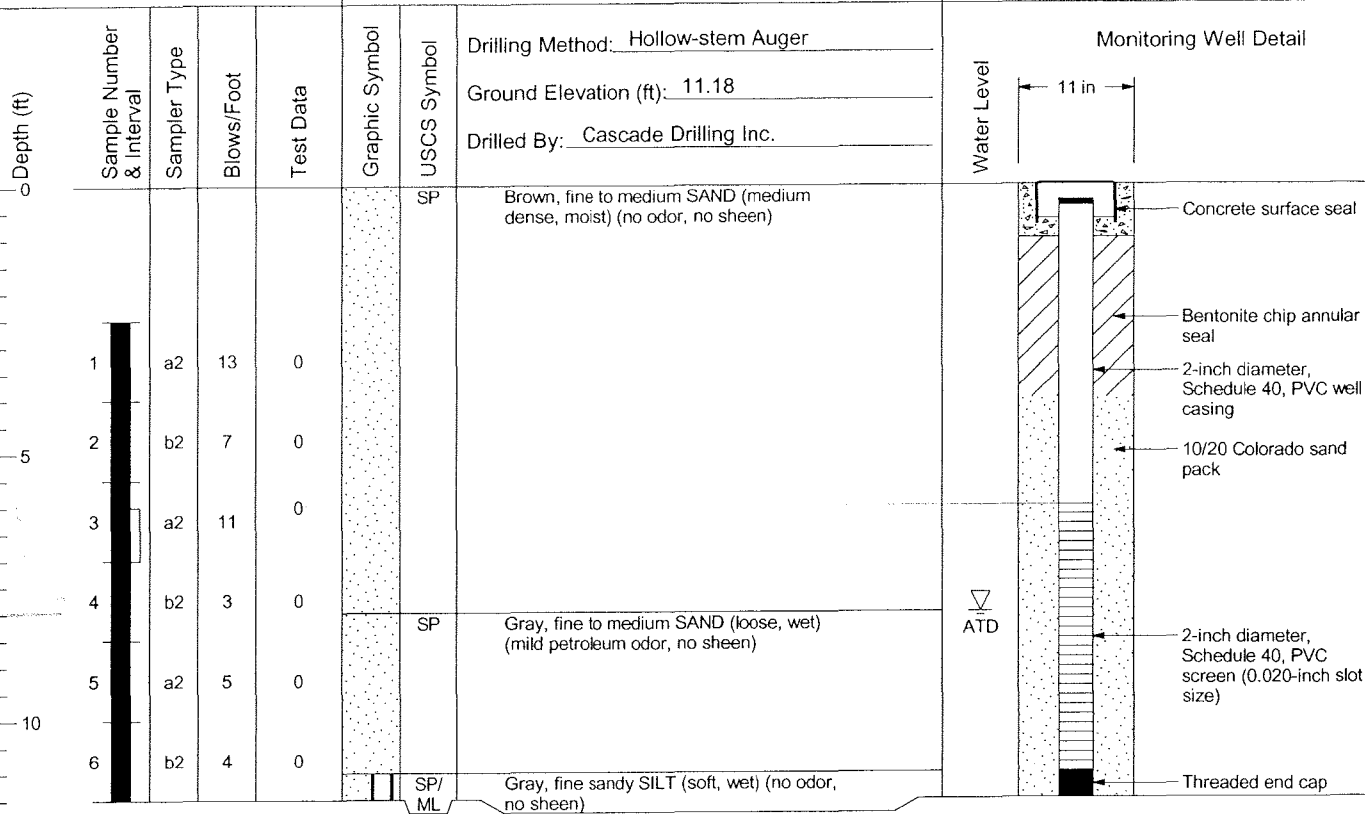
BZTO104(e)023284

LW37D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 11/02/04
Total Depth of Boring = 11.5 ft.

Monitoring Well Completed 11/02/04
Elevation at Top of Protective Casing = 11.18 ft.
Elevation at Top of Monitoring Well Casing = 10.84 ft.
Total Depth of Monitoring Well = 11.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231009.036 12/3/04 I:\MODELING\GINT\PROJECTS\231009.036.GPJ WELL LOG



Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW37D

Figure
A-

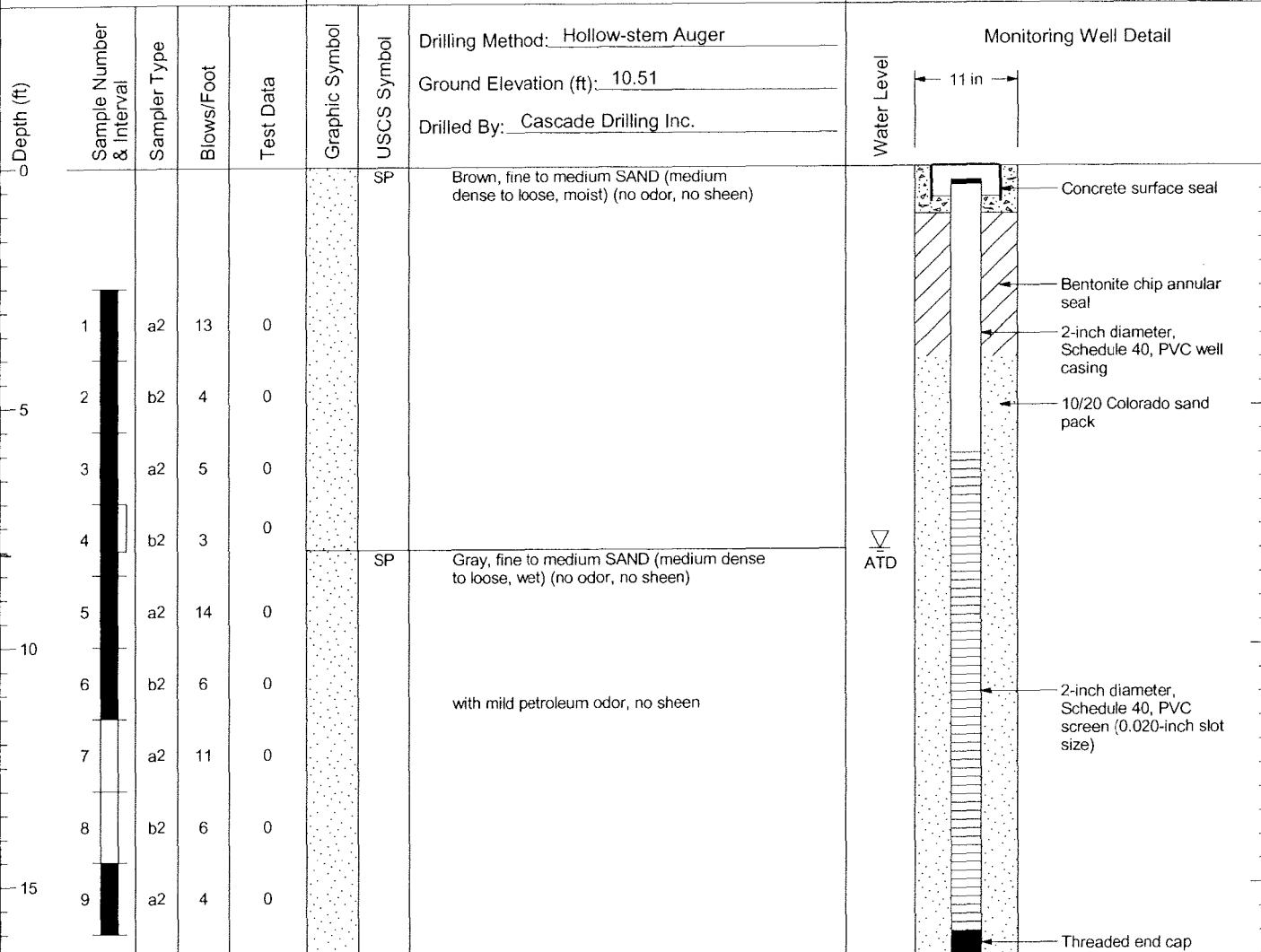
BZTO104(e)023285

LW38D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 11/02/04
Total Depth of Boring = 16.5 ft.

Monitoring Well Completed 11/03/04
Elevation at Top of Protective Casing = 10.51 ft.
Elevation at Top of Monitoring Well Casing = 10.21 ft.
Total Depth of Monitoring Well = 16.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW38D

Figure
A-

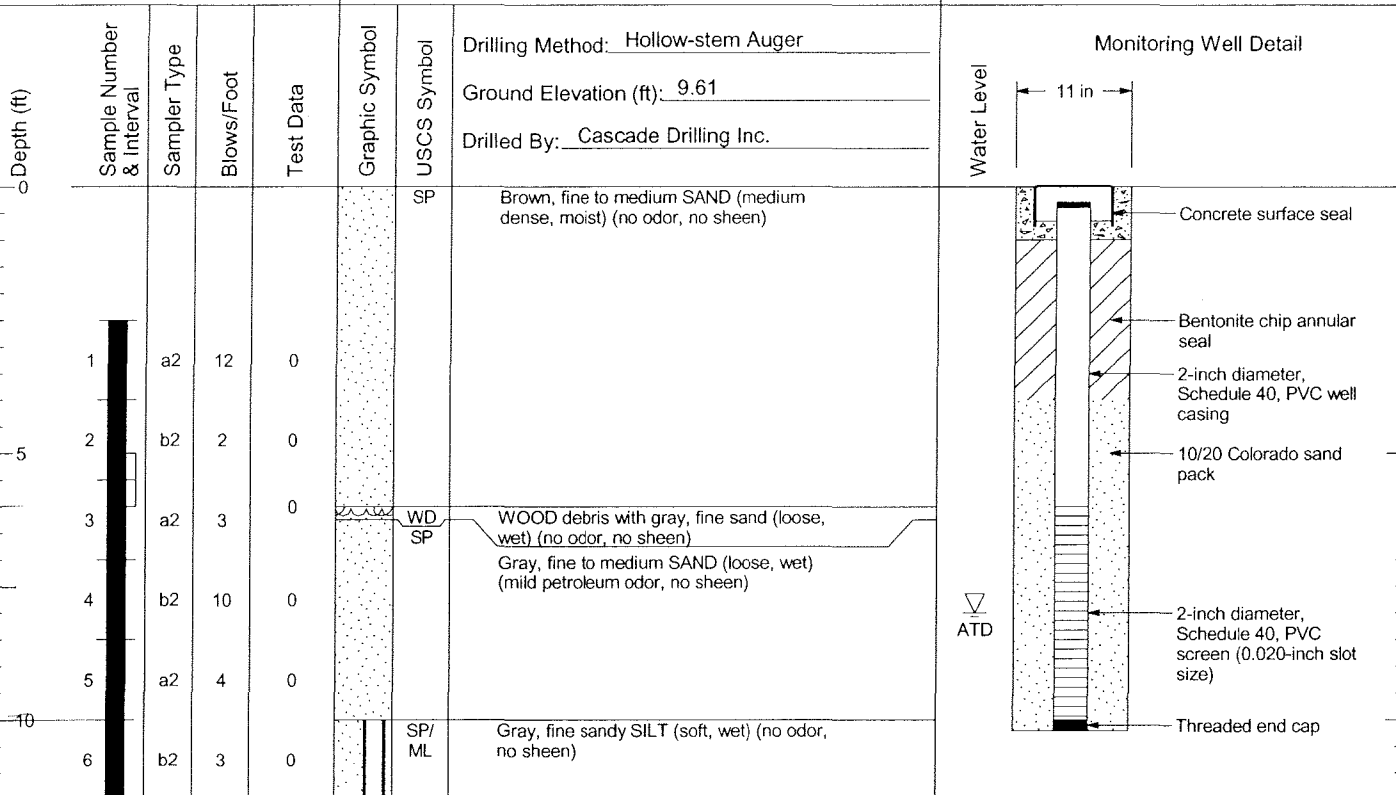
BZTO104(e)023286

LW39D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 11/03/04
Total Depth of Boring = 11.5 ft.

Monitoring Well Completed 11/03/04
Elevation at Top of Protective Casing = 9.61 ft.
Elevation at Top of Monitoring Well Casing = 9.35 ft.
Total Depth of Monitoring Well = 10.2 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW39D

Figure
A-

231009.036 12/3/04 I:\MODELING\GINT\PROJECTS\231009.036.GPJ WELL LOG

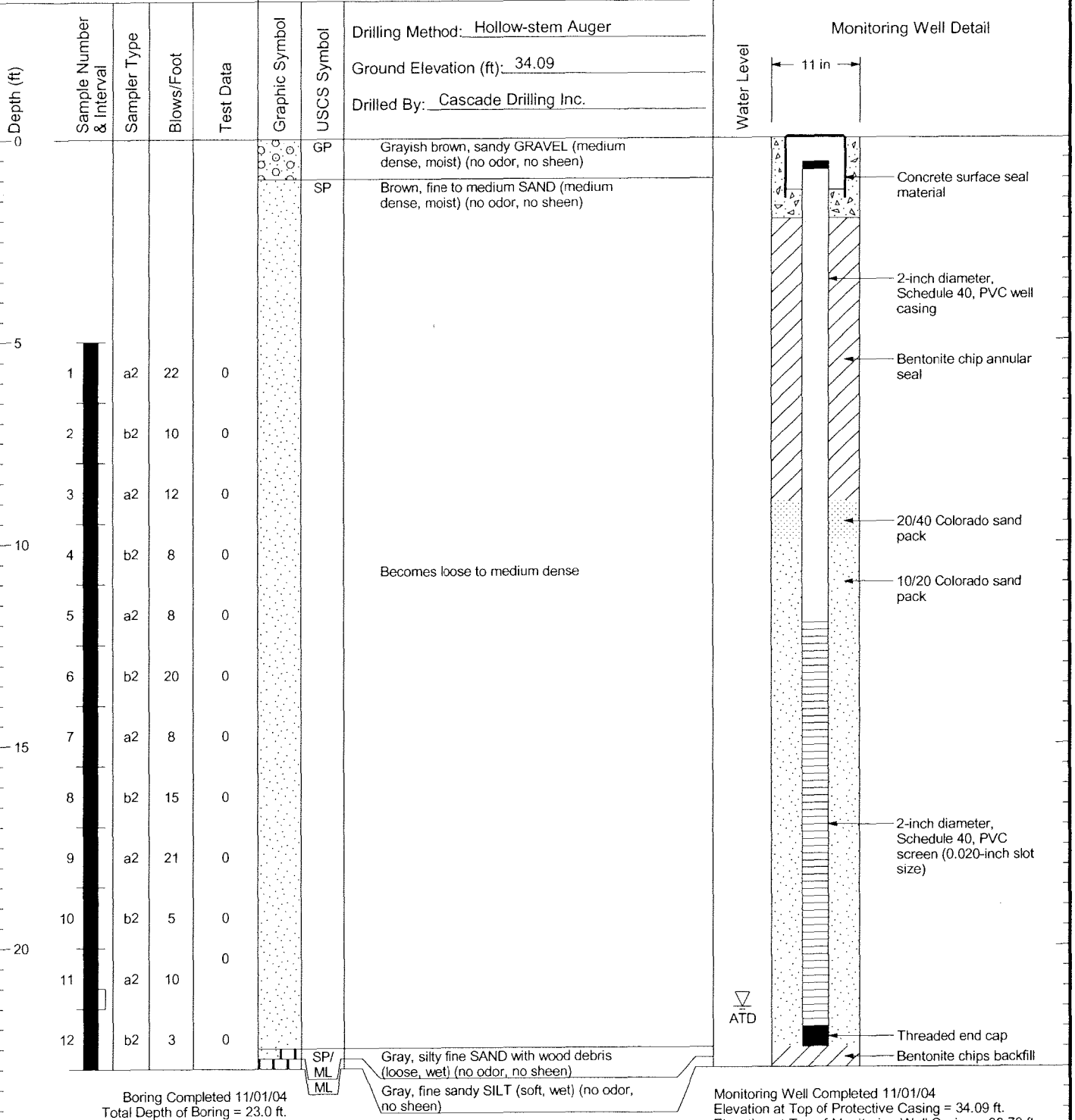
BZTO104(e)023287

LW40S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



231009.036 12/3/04 I:\MODELING\GINT\PROJECTS\231009.036.GPJ WELL LOG

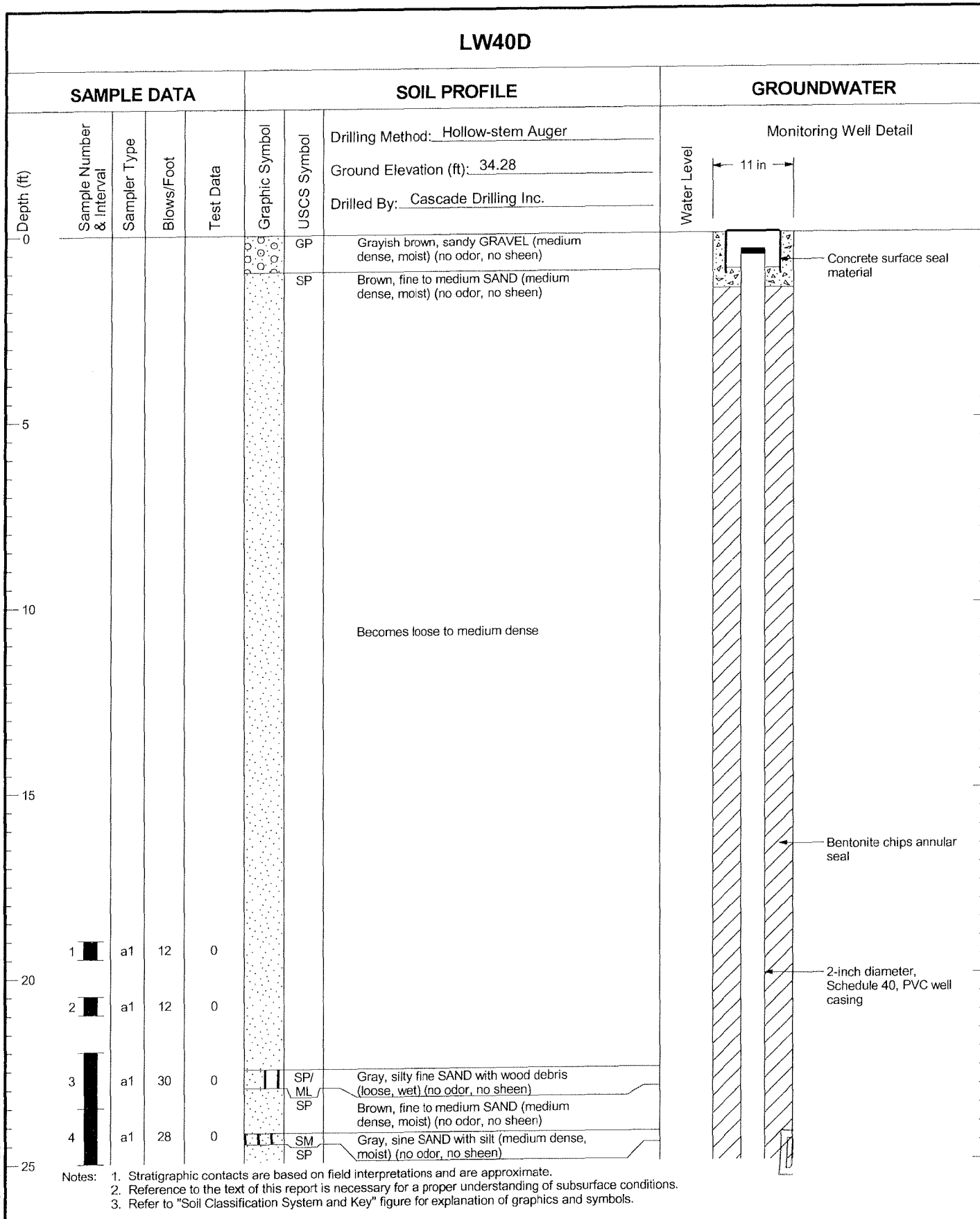


Time Oil NW Terminal
Portland OR

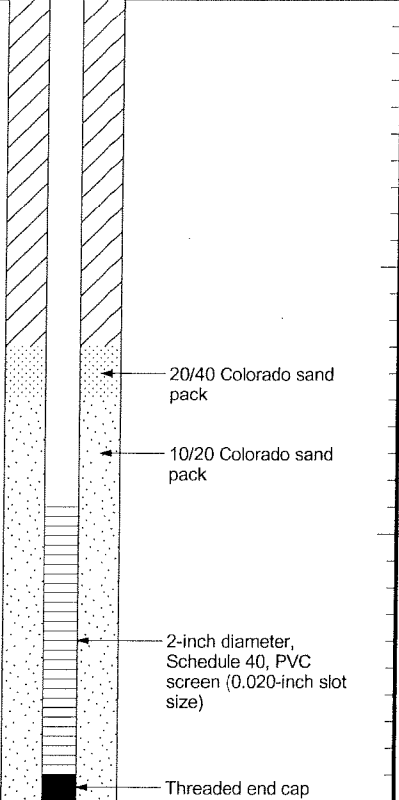






Log of Monitoring Well LW40S

Figure
A-

BZTO104(e)023288



LW40D

SAMPLE DATA					SOIL PROFILE		GROUNDWATER			
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Monitoring Well Detail			
							Water Level			
									Drilling Method: Hollow-stem Auger	
									Ground Elevation (ft): 34.28	
									Drilled By: Cascade Drilling Inc.	
25										
5	a1	26	0		SP	Brown, fine to medium SAND (medium dense, moist) (no odor, no sheen)				
6	a1	20	0							
7	a1	8	0		SP/ML	Gray, fine sandy SILT (stiff, moist) (no odor, no sheen)				
30	8	a1	26	0		SP	Brown, fine to medium SAND (medium dense, moist) (no odor, no sheen)			
						SP/ML	Gray, fine sandy SILT (stiff, moist) (no odor, no sheen)			
9	a1	20	0			SP	Brown, fine to medium SAND (medium dense, moist) (no odor, no sheen)			
10	a1	22	0							
35	11	a1	23	0		SP	Gray, fine to medium SAND (medium dense, wet) (no odor, no sheen)			
12	a1	24	0							
13	a1	18	0							
14	a1	43	0			Becomes dense				
40										

Boring Completed 11/19/04
Total Depth of Boring = 40.0 ft.

Monitoring Well Completed 11/19/04
Elevation at Top of Protective Casing = 34.28 ft.
Elevation at Top of Monitoring Well Casing = 33.77 ft.
Total Depth of Monitoring Well = 40.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



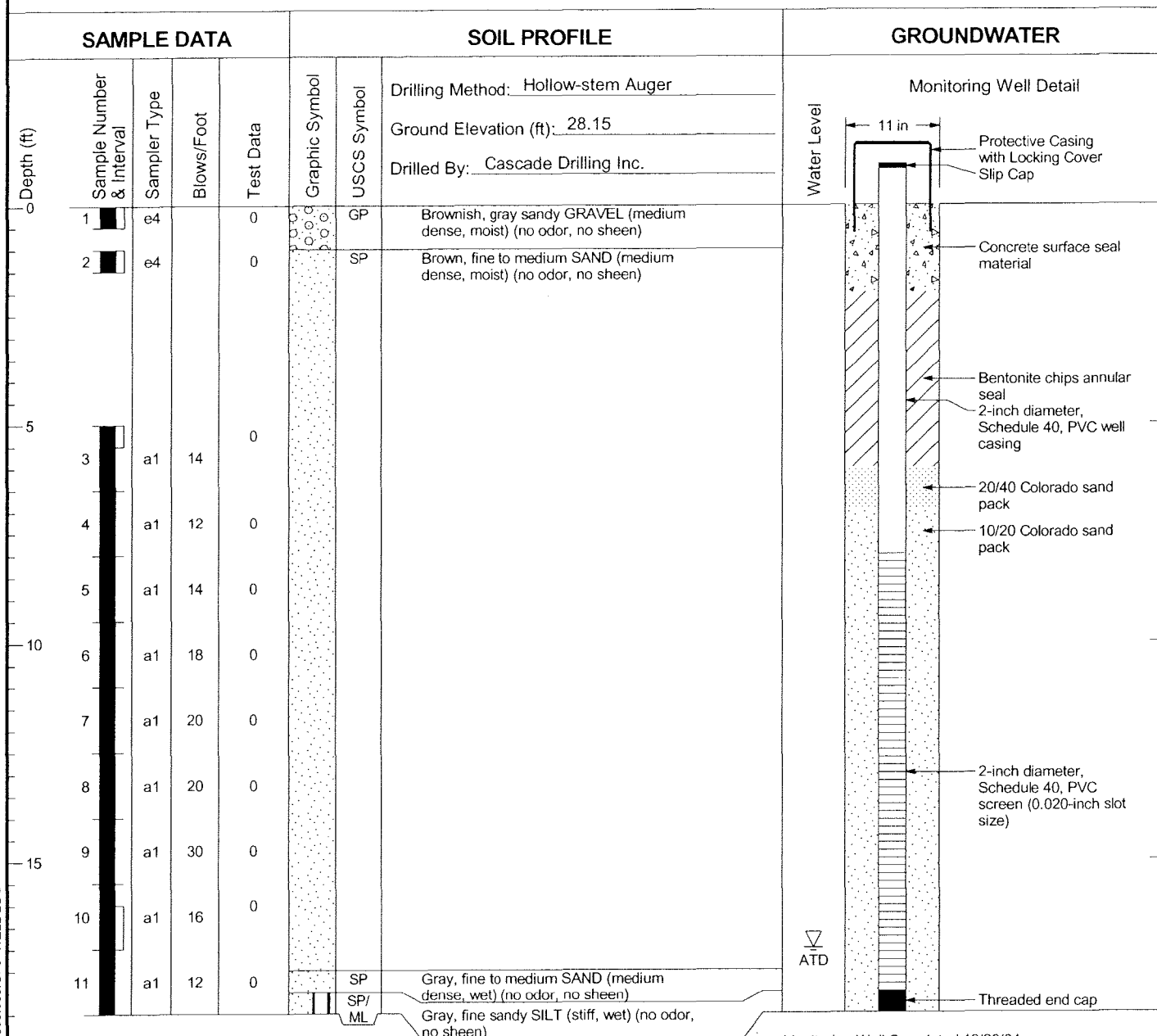
Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW40D

Figure
A-
(2 of 2)

BZTO104(e)023290

LW41S



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW41S

Figure
A-

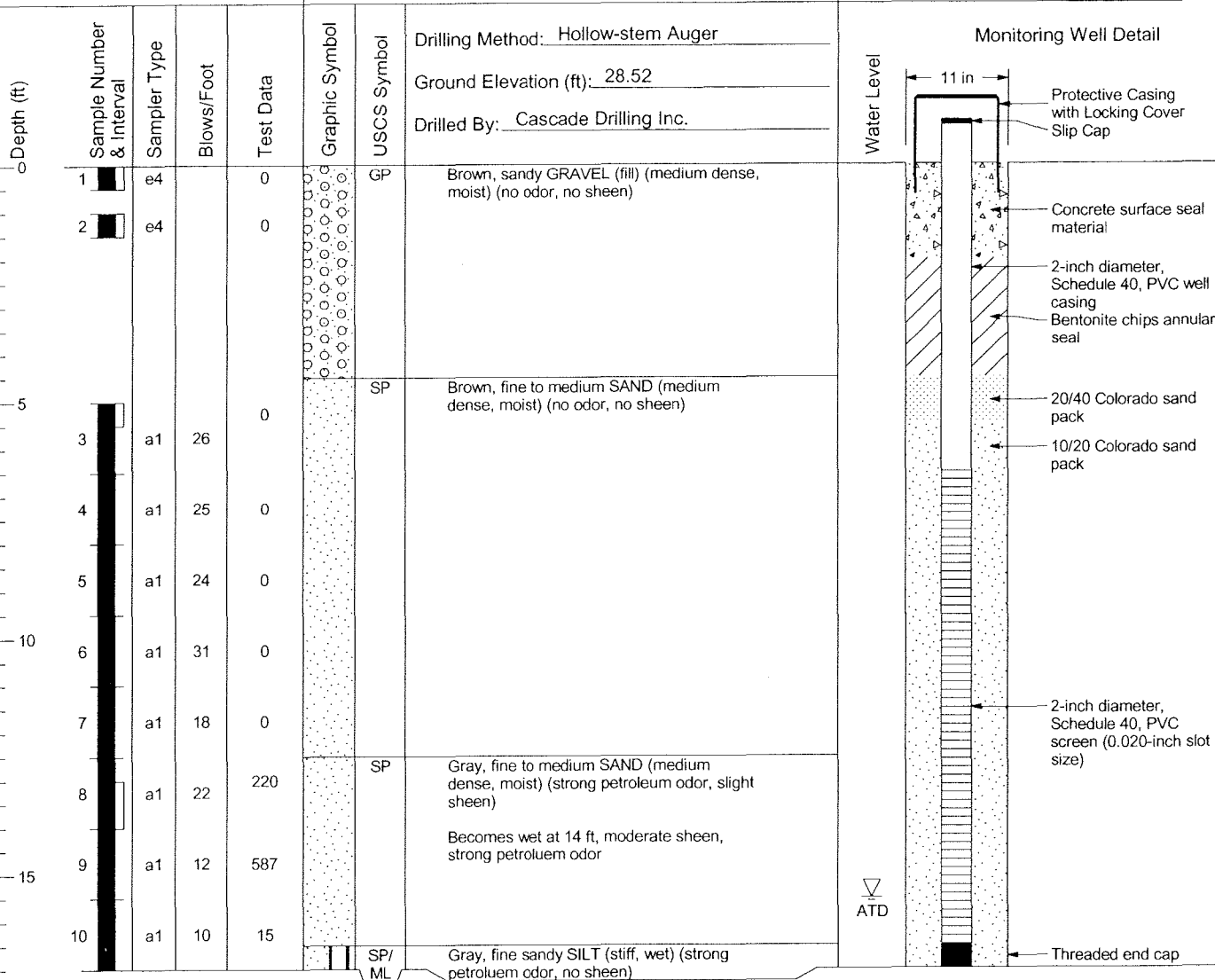
BZTO104(e)023291

LW42S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



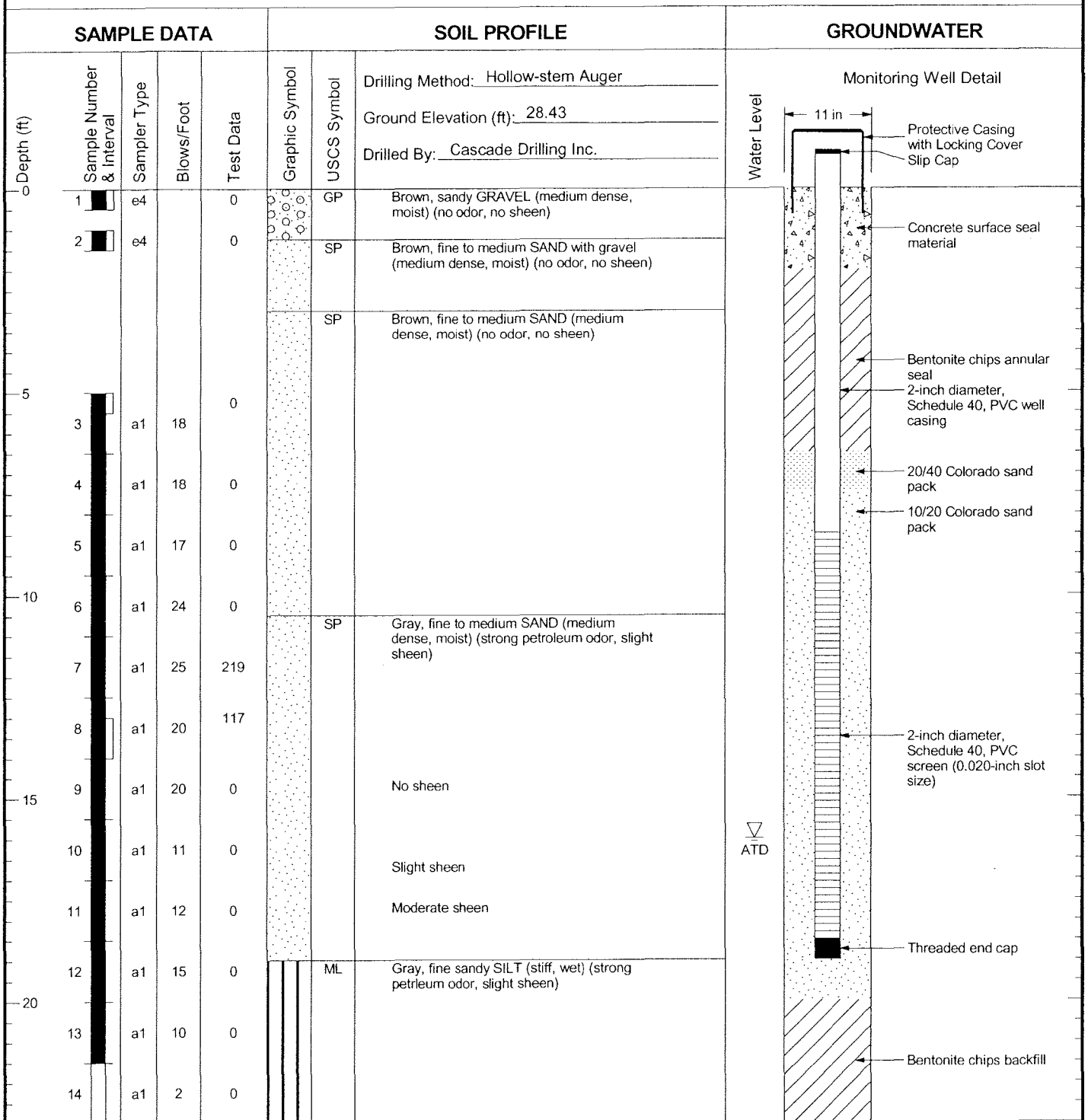
Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW42S

Figure
A-

BZTO104(e)023292

LW43S



Boring Completed 10/28/04
Total Depth of Boring = 23.0 ft.

Monitoring Well Completed 10/28/04
Elevation at Top of Protective Casing = 31.12 ft.
Elevation at Top of Monitoring Well Casing = 30.66 ft.
Total Depth of Monitoring Well = 23.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW43S

Figure
A-

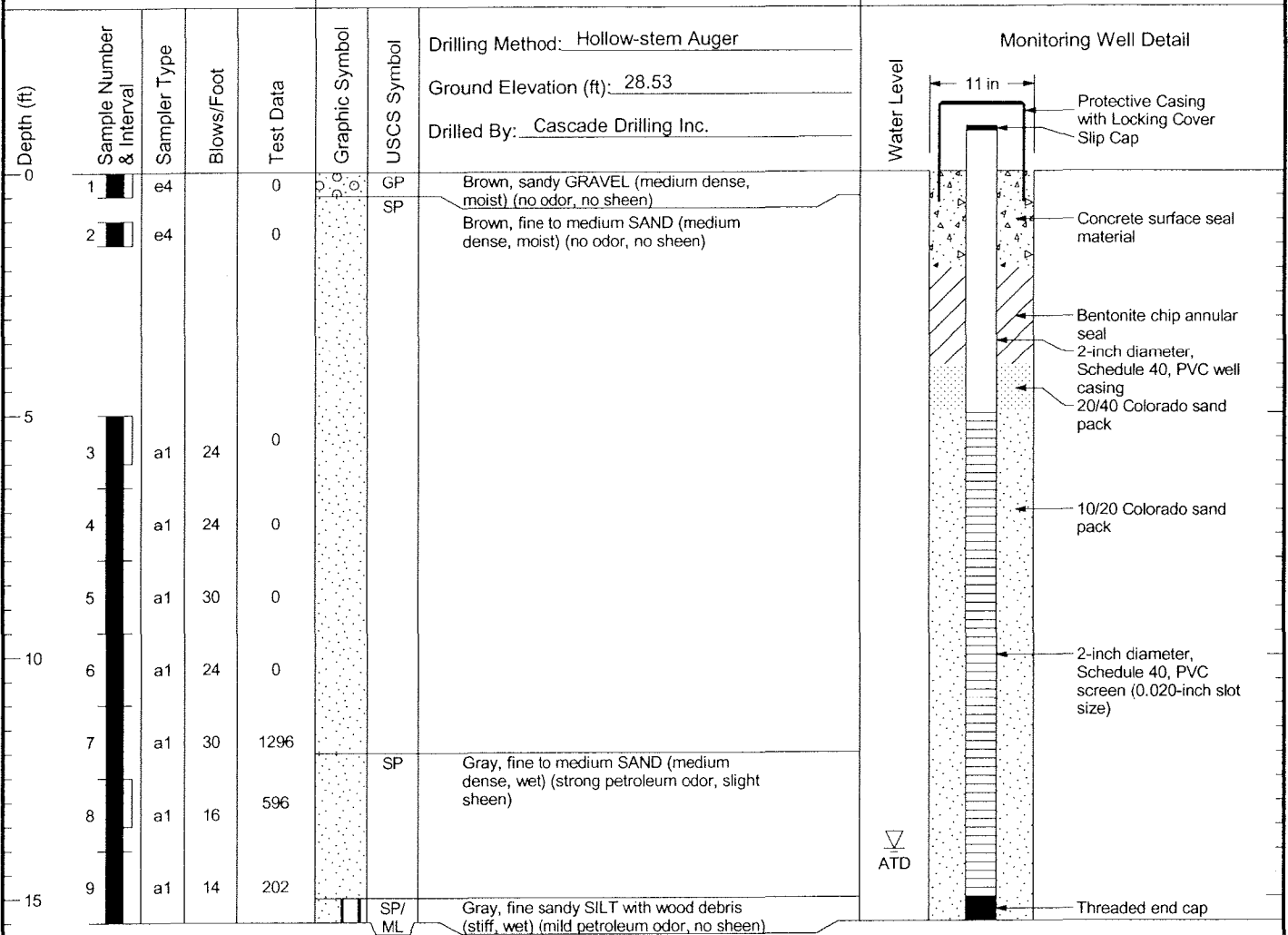
BZTO104(e)023293

LW44S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 10/28/04
Total Depth of Boring = 15.5 ft.

Monitoring Well Completed 10/28/04
Elevation at Top of Protective Casing = 31.28 ft.
Elevation at Top of Monitoring Well Casing = 30.86 ft.
Total Depth of Monitoring Well = 15.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



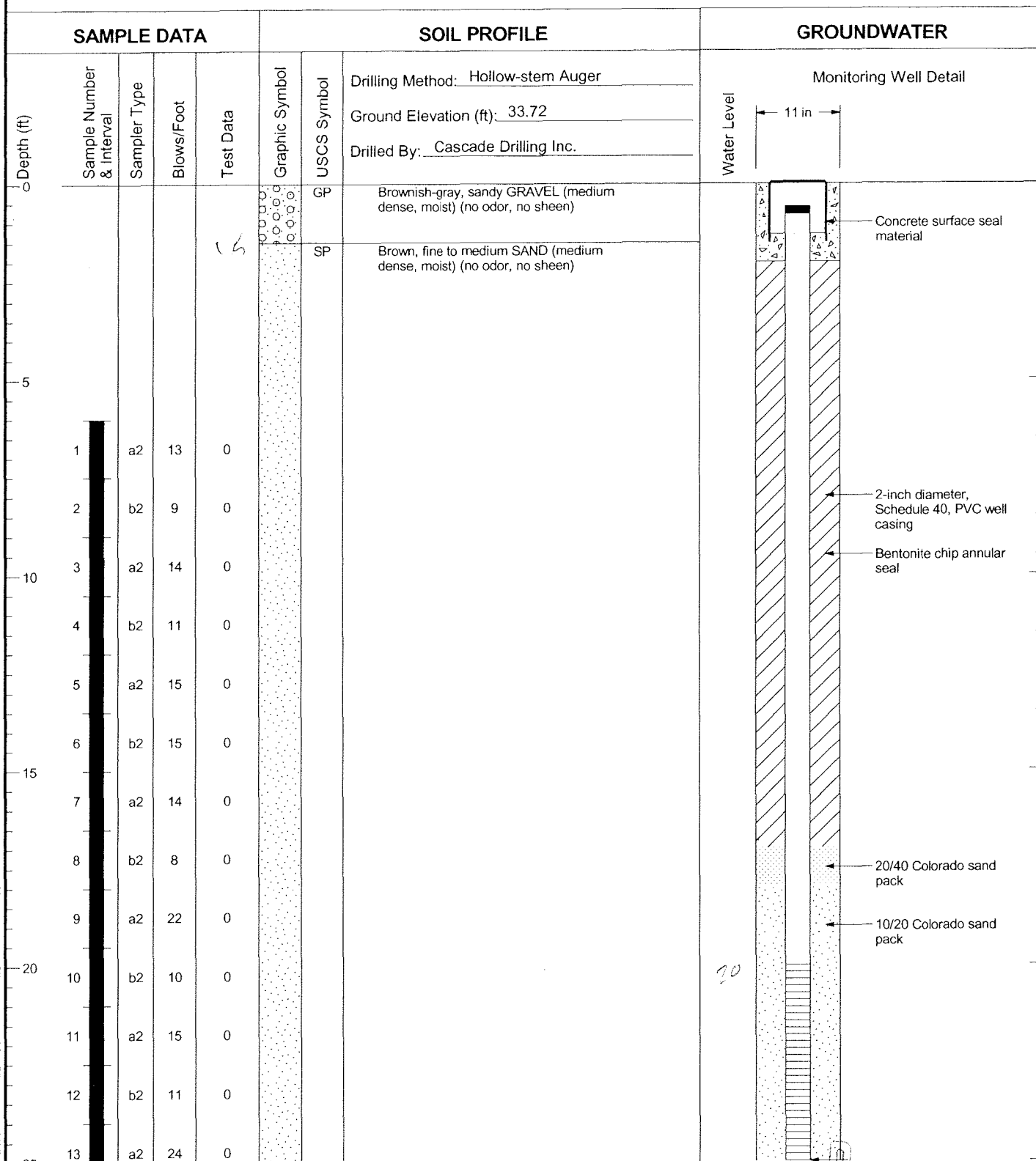
Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW44S

Figure
A-

BZTO104(e)023294

LW45D



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



LANDAU
ASSOCIATES

Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW45D

Figure

A-
(1 of 2)

LW45D

SAMPLE DATA					SOIL PROFILE		GROUNDWATER	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	Test Data	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-stem Auger	Monitoring Well Detail
25						SP	Ground Elevation (ft): 33.72	<p>2-inch diameter, Schedule 40, PVC screen (0.020-inch slot size)</p> <p>Threaded end cap</p> <p>Water Level</p> <p>ATD</p>
14	b2	17	0			SP	Gray, fine to medium SAND (medium dense, moist) (no odor, no sheen)	
15	a2	25	0					
16	b2	13	0				Becomes wet	
30						SP/ML	Gray, fine sandy SILT (stiff, wet) (no odor, no sheen)	
17	a2	7	0					

Boring Completed 11/01/04
Total Depth of Boring = 31.5 ft.

Monitoring Well Completed 11/01/04
Elevation at Top of Protective Casing = 33.72 ft.
Elevation at Top of Monitoring Well Casing = 33.36 ft.
Total Depth of Monitoring Well = 31.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

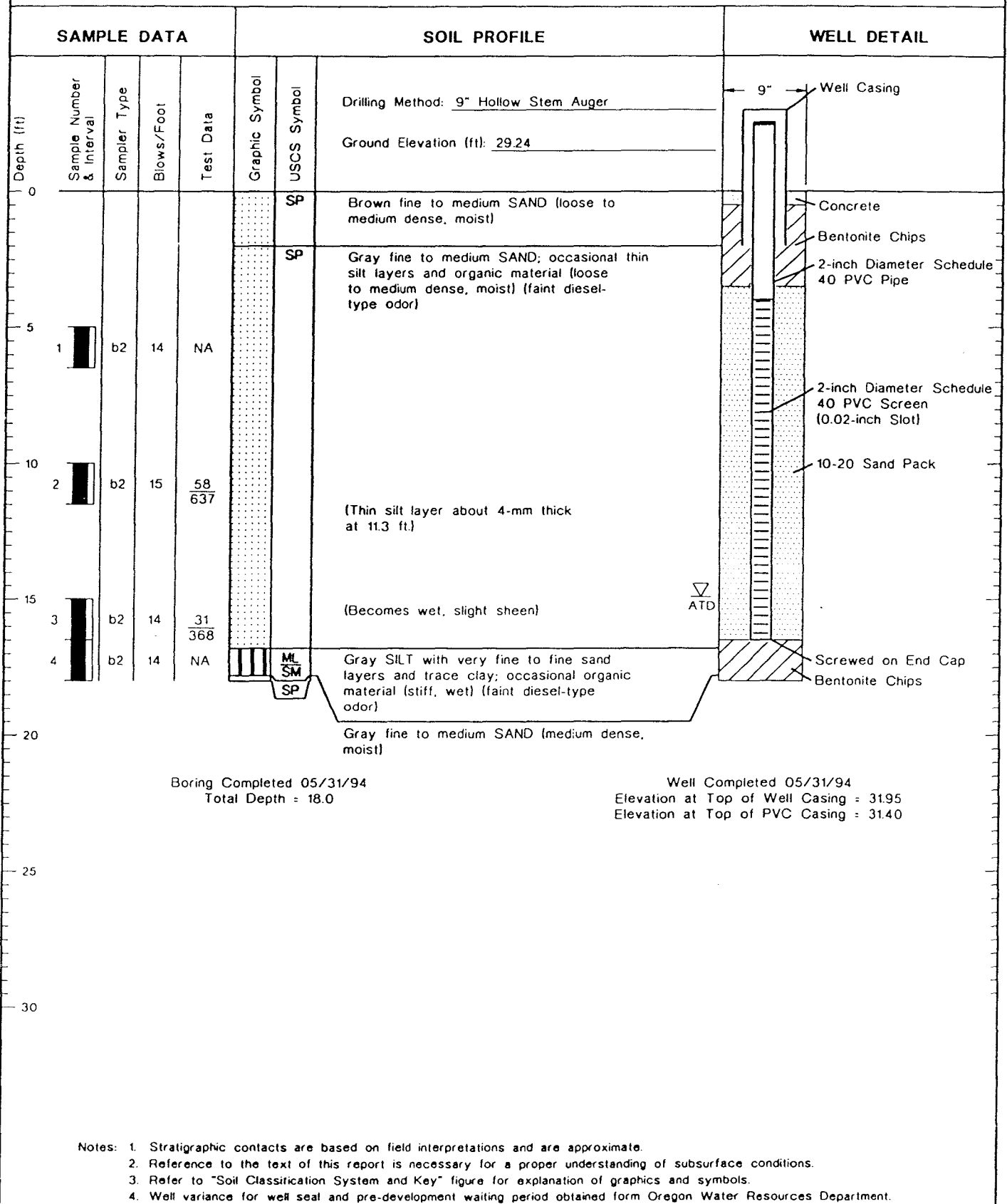


Time Oil NW Terminal
Portland OR

Log of Monitoring Well LW45D

Figure
A-
(2 of 2)

MW-N



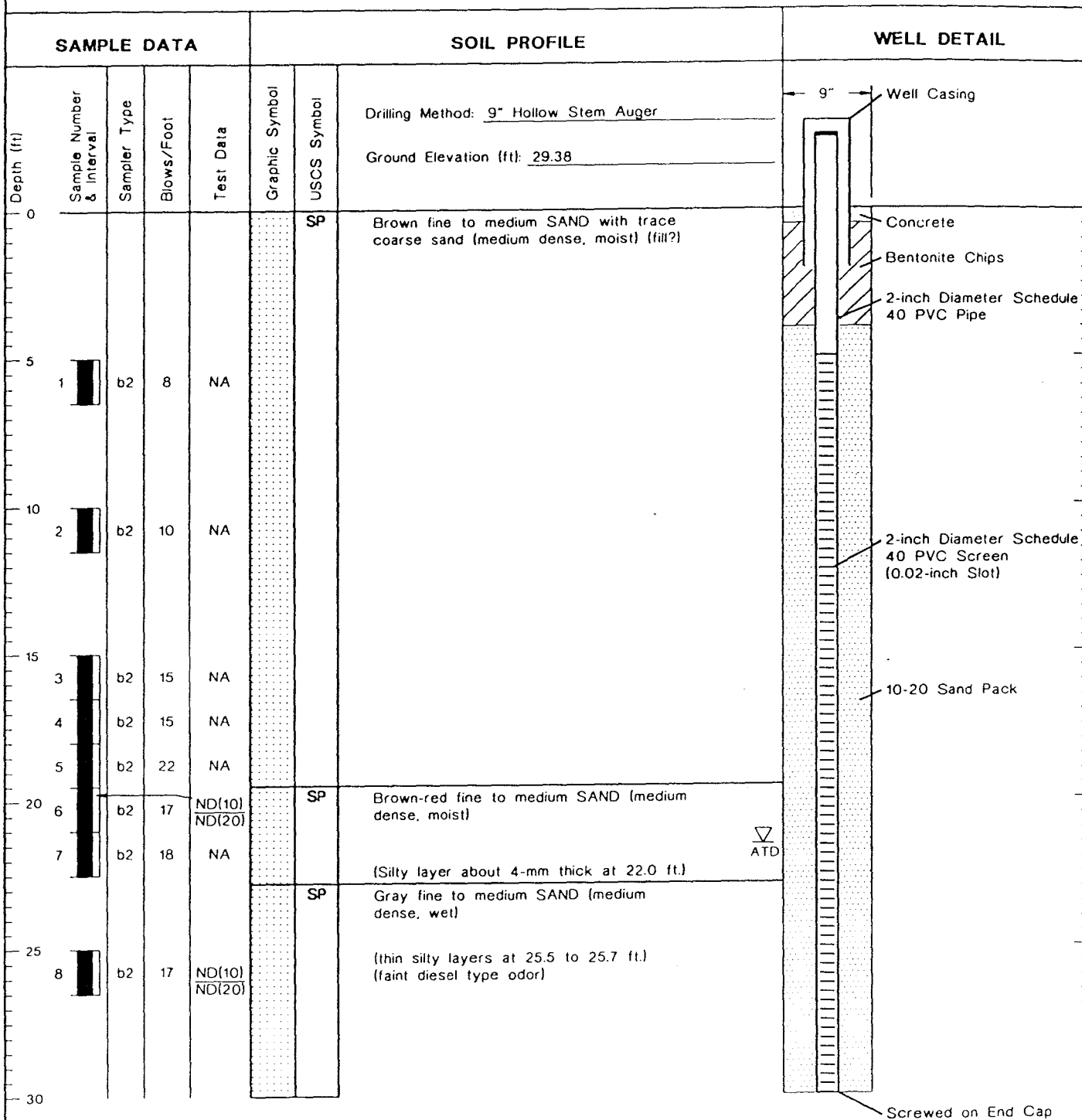
231002.10 Time Oil/Gasoline Release Report 6/94



Boring and Monitoring Well MW-N

Figure A-2

MW-O



Boring Completed 05/31/94
Total Depth = 30.0

Well Completed 05/31/94
Elevation at Top of Well Casing = 32.31
Elevation at Top of PVC Casing = 32.03

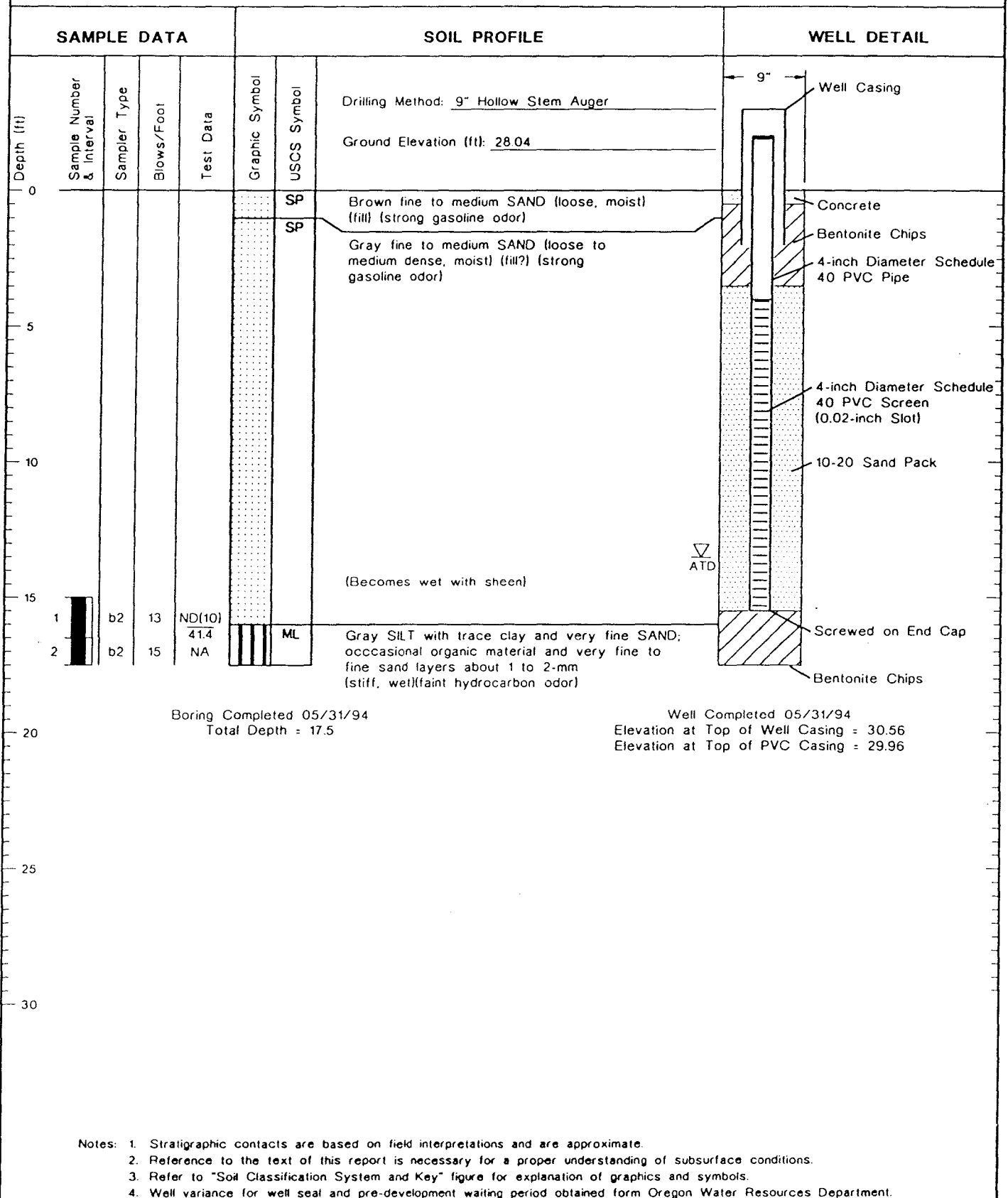
- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Well variance for well seal and pre-development waiting period obtained from Oregon Water Resources Department.



Boring and Monitoring Well MW-O

Figure A-3

MW-P

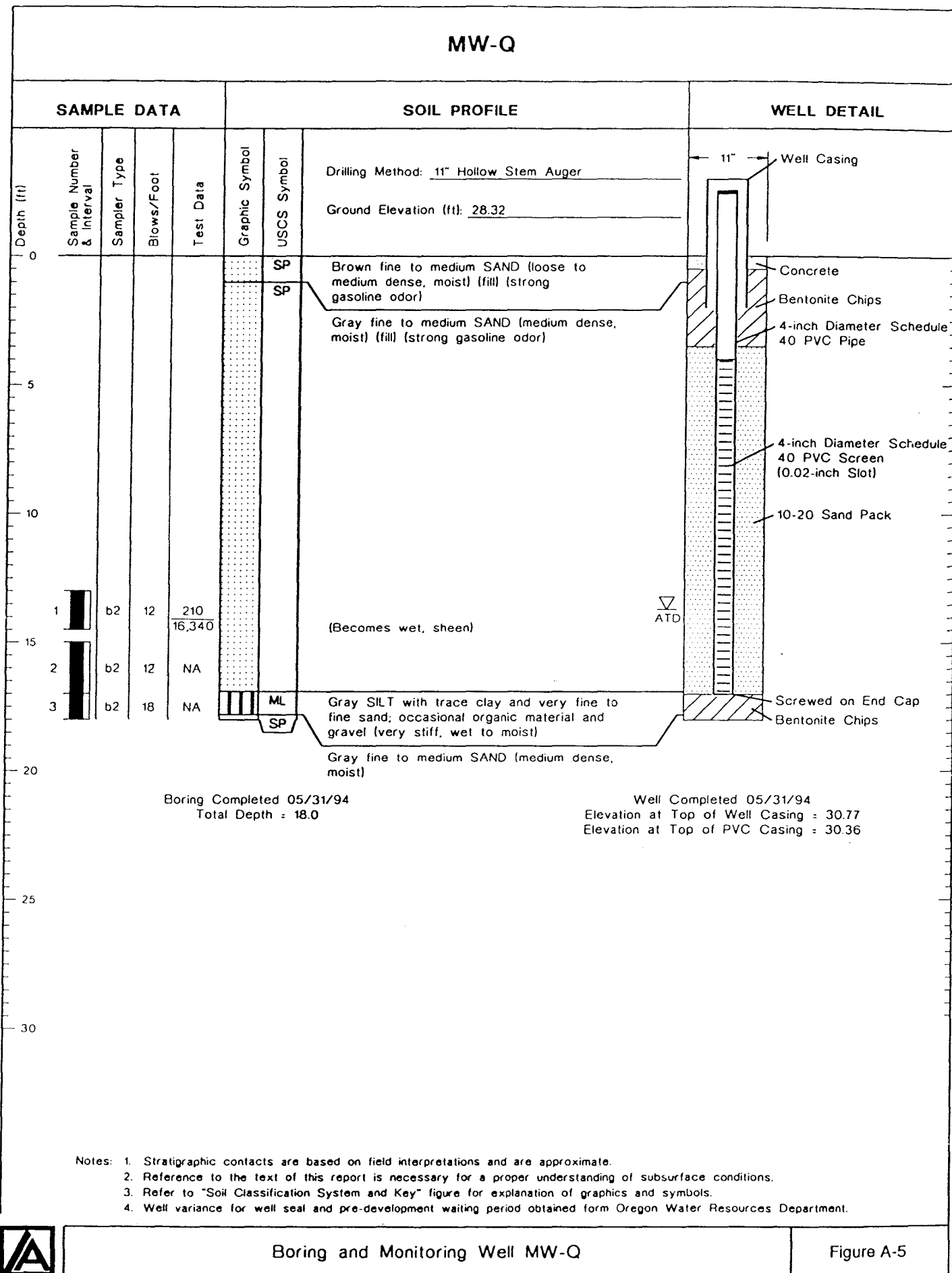


231002.10 Time Oil/Gasoline Release Report 6/94

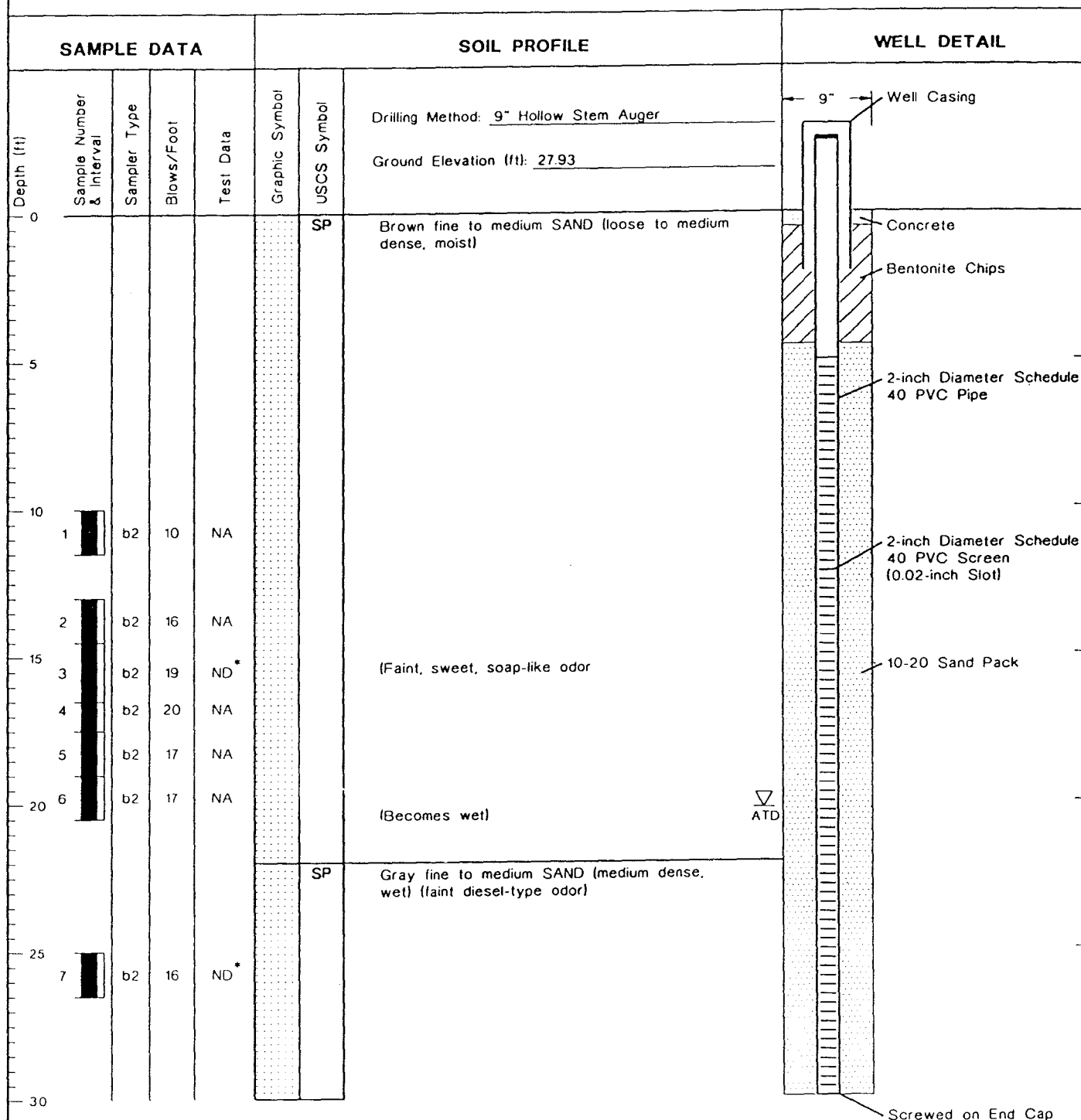


Boring and Monitoring Well MW-P

Figure A-4



MW-R



Boring Completed 05/31/94
Total Depth = 30.0

Well Completed 05/31/94
Elevation at Top of Well Casing = 30.86
Elevation at Top of PVC Casing = 30.47

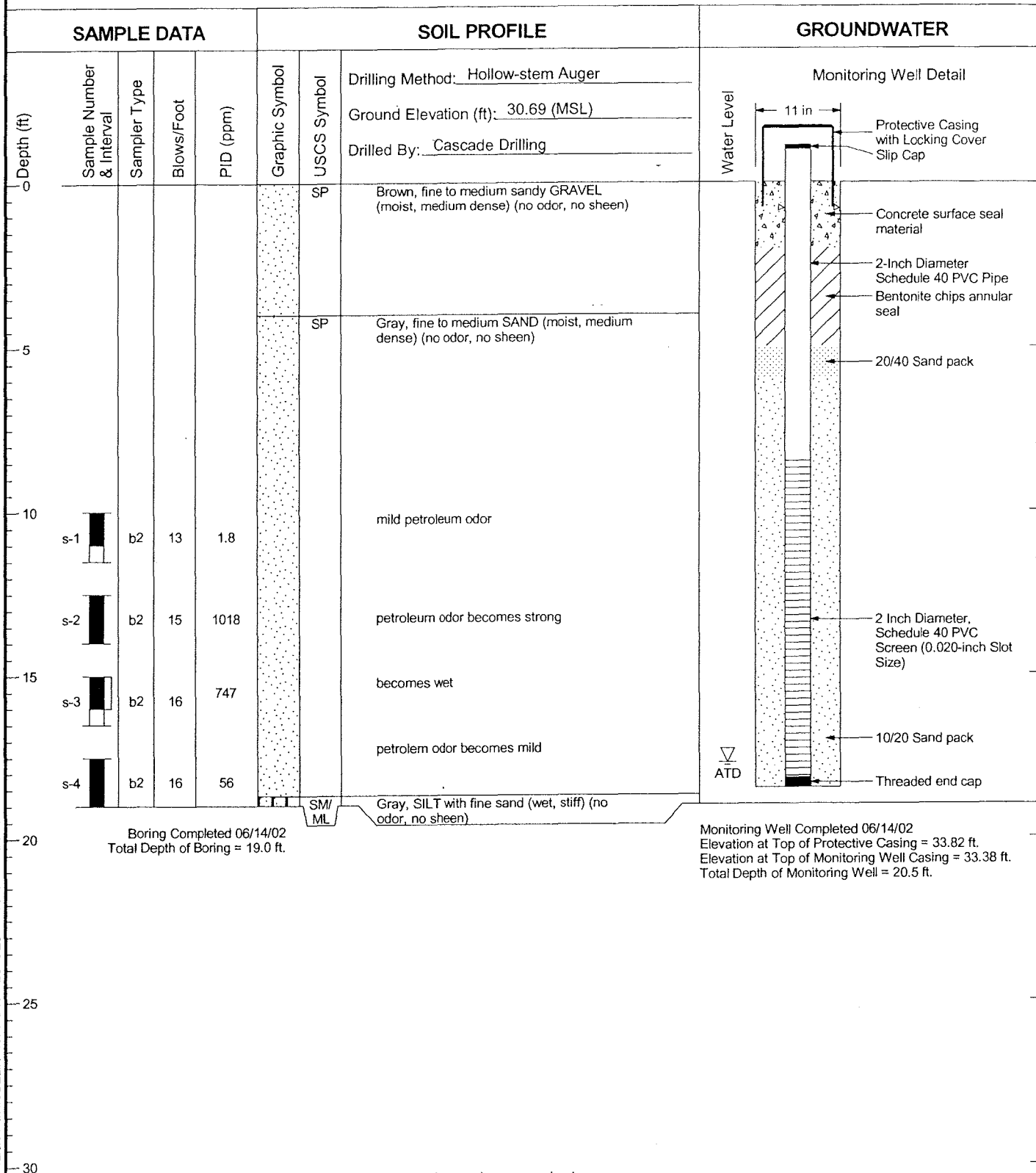
- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Well variance for well seal and pre-development waiting period obtained from Oregon Water Resources Department.



Boring and Monitoring Well MW-R

Figure A-6

OX1S



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX1S

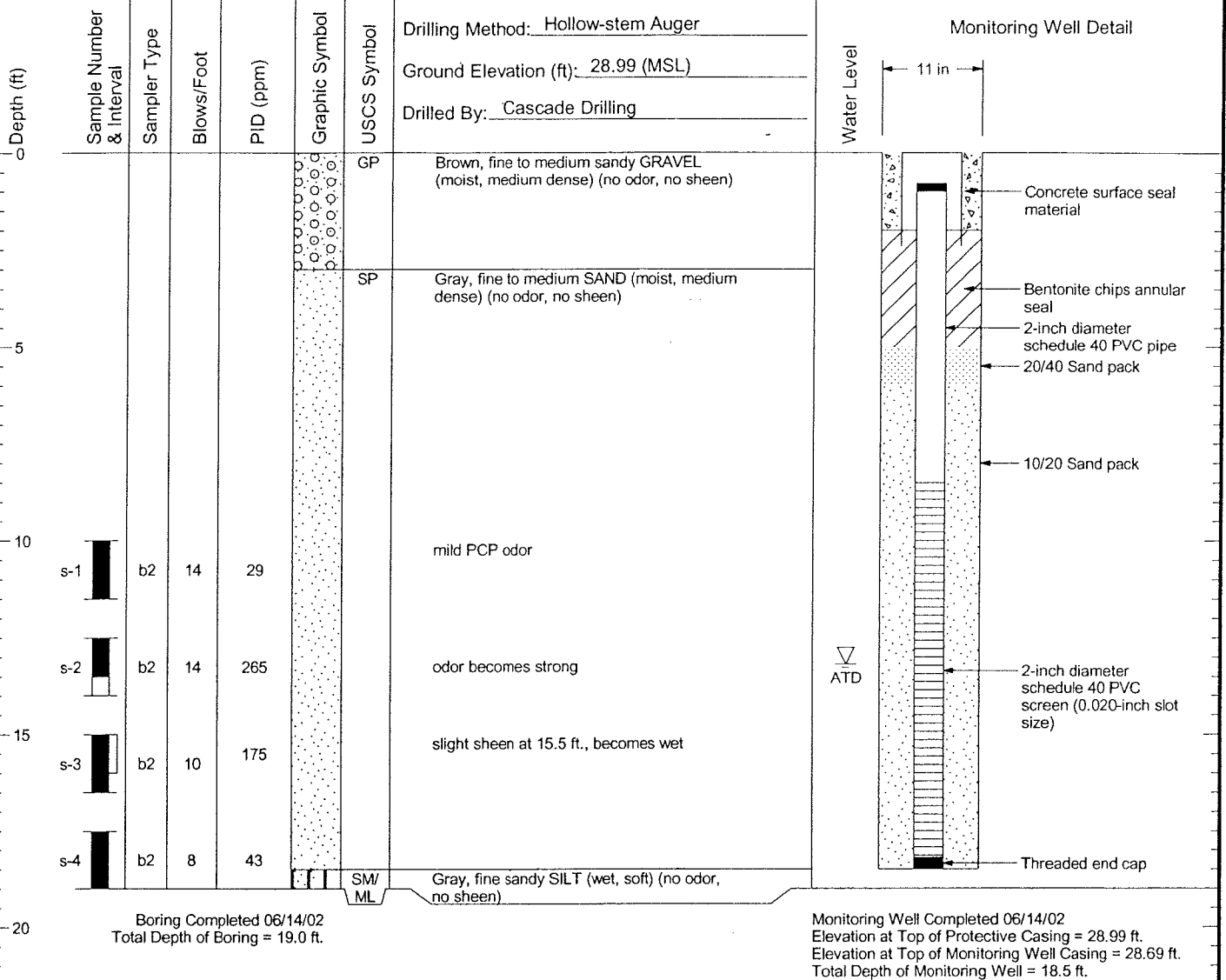
Figure
A-

OX2S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX2S

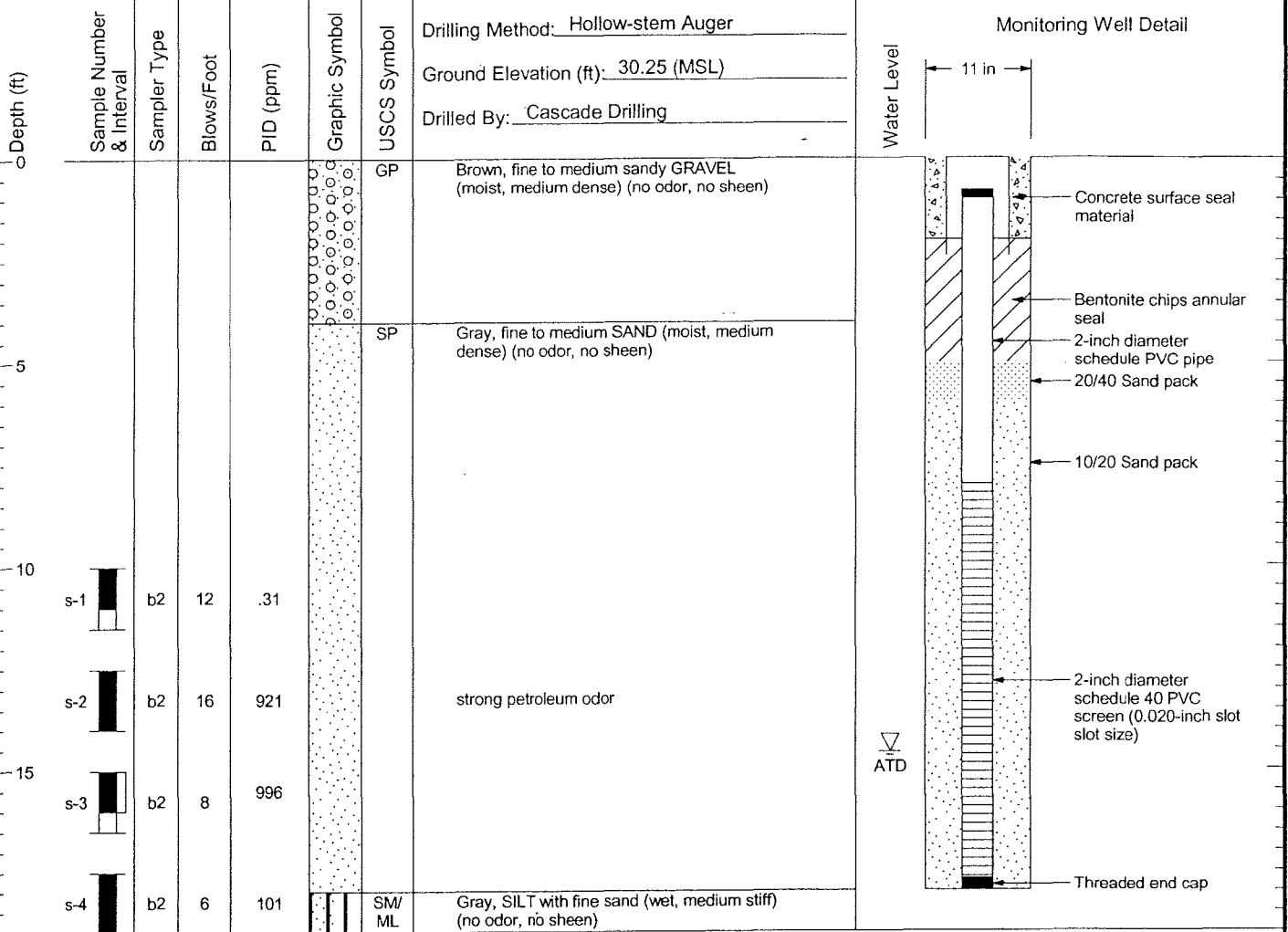
Figure
A-

OX3S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 06/14/02
Total Depth of Boring = 19.0 ft.

Monitoring Well Completed 06/14/02
Elevation at Top of Protective Casing = 30.25 ft.
Elevation at Top of Monitoring Well Casing = 30.01 ft.
Total Depth of Monitoring Well = 18.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



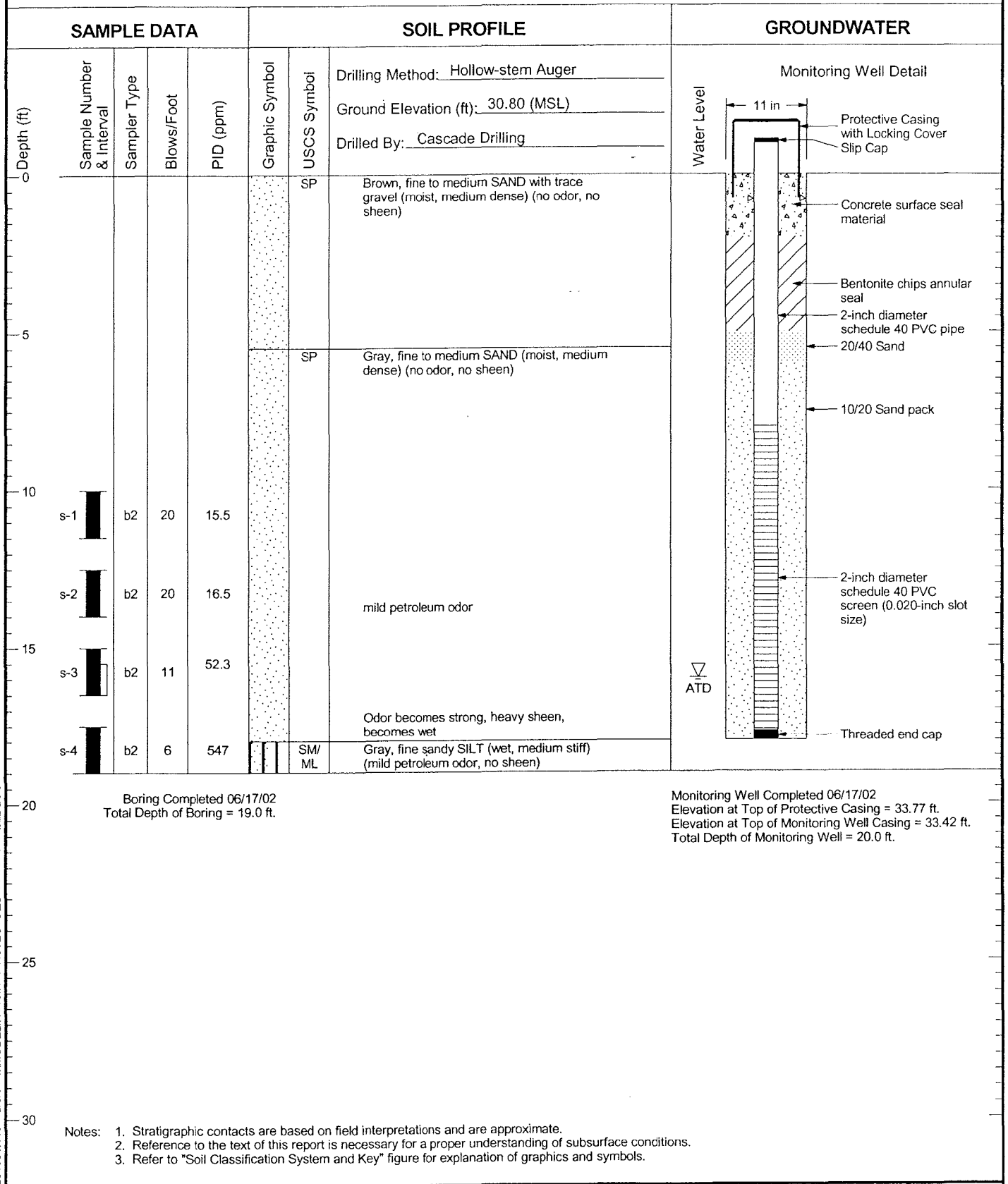
Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX3S

Figure
A-

BZTO104(e)023304

OX4S



Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX4S

Figure
A-

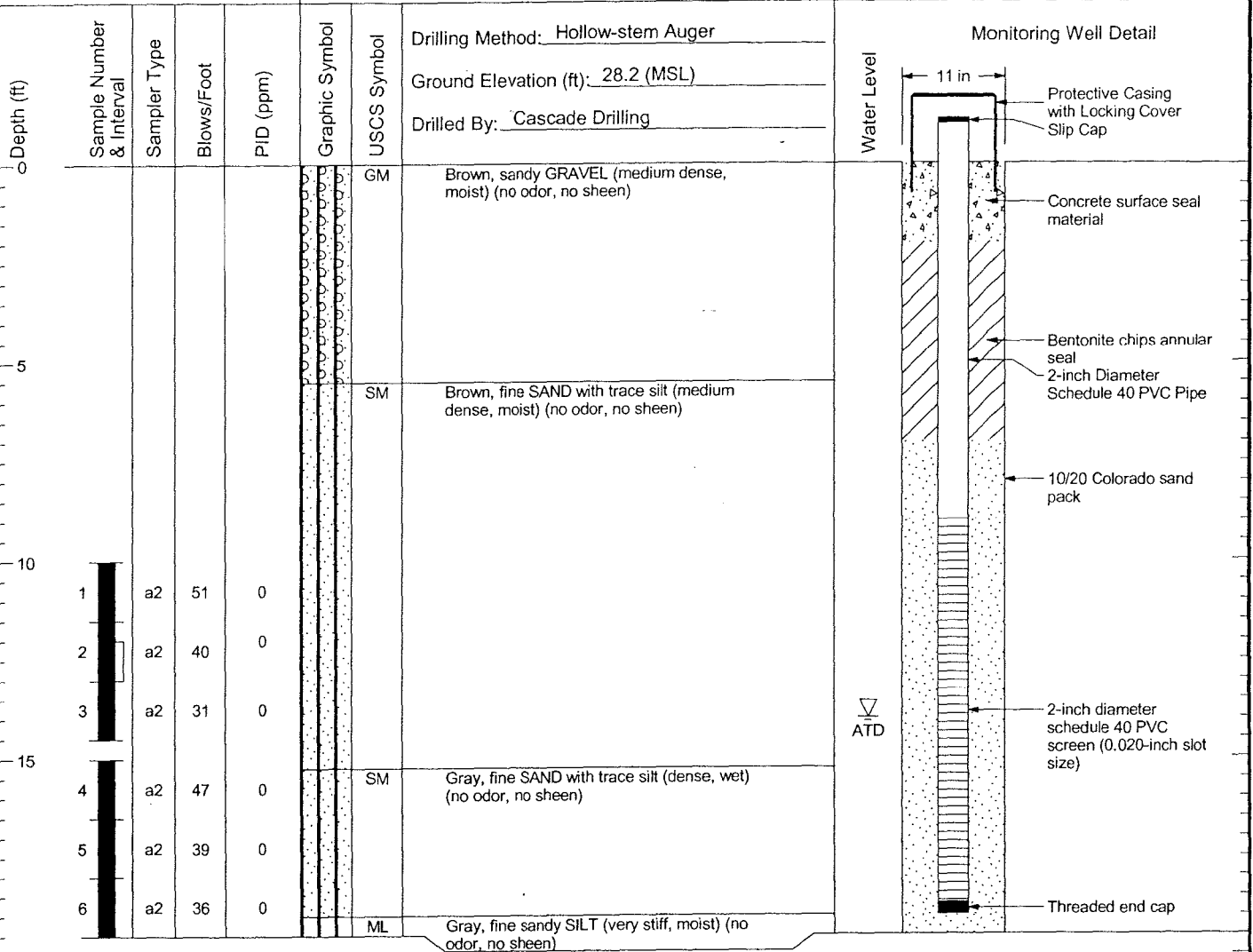
BZTO104(e)023305

OX5S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 09/17/03
Total Depth of Boring = 19.5 ft.

Monitoring Well Completed 09/17/03
Elevation at Top of Protective Casing = 31.00 ft.
Elevation at Top of Monitoring Well Casing = 30.74 ft.
Total Depth of Monitoring Well = 19.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX5S

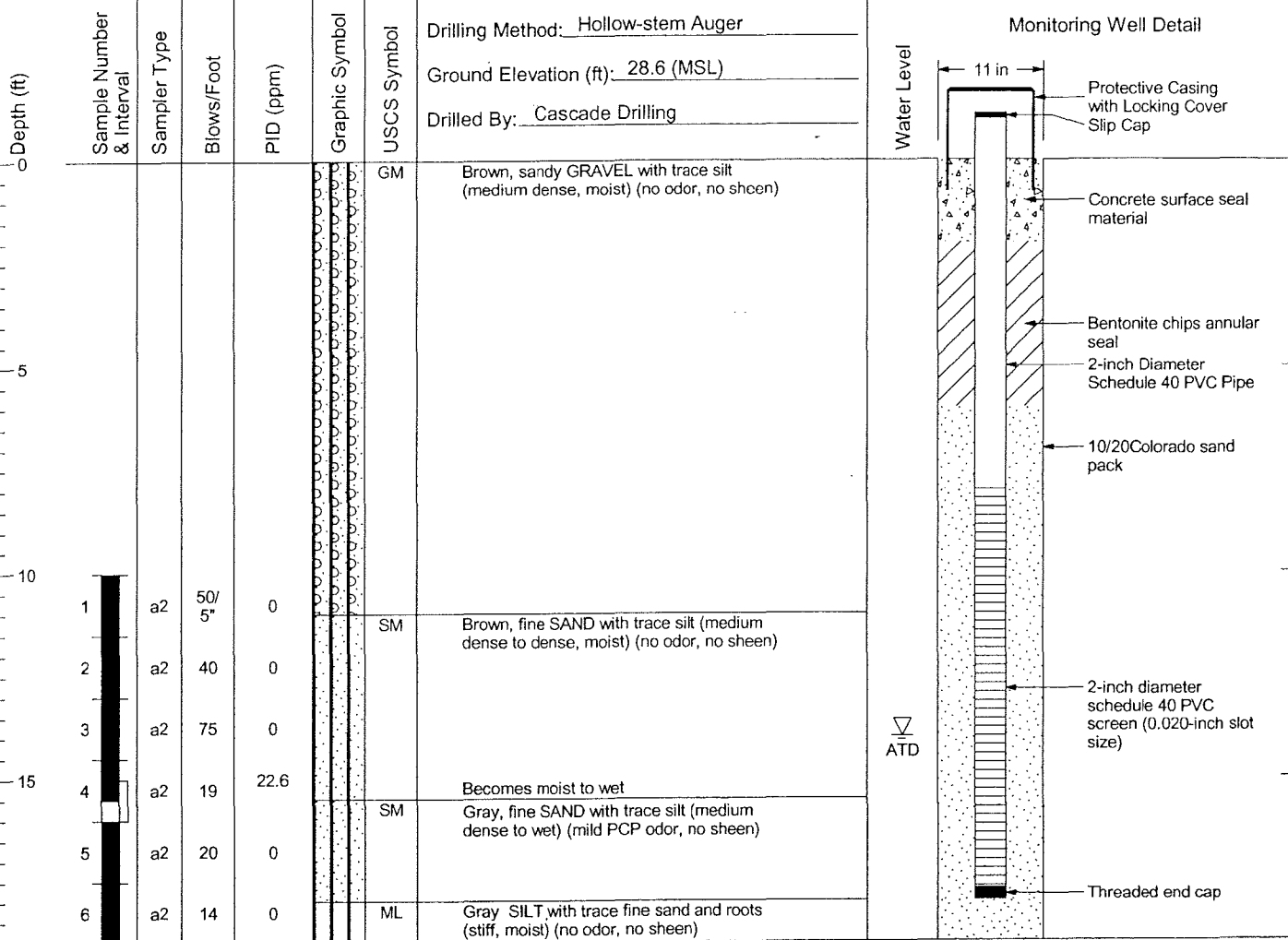
Figure
A-

OX6S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 09/17/03
Total Depth of Boring = 19.0 ft.

Monitoring Well Completed 09/17/03
Elevation at Top of Protective Casing = 31.29 ft.
Elevation at Top of Monitoring Well Casing = 30.92 ft.
Total Depth of Monitoring Well = 18.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure

A-

Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX6S



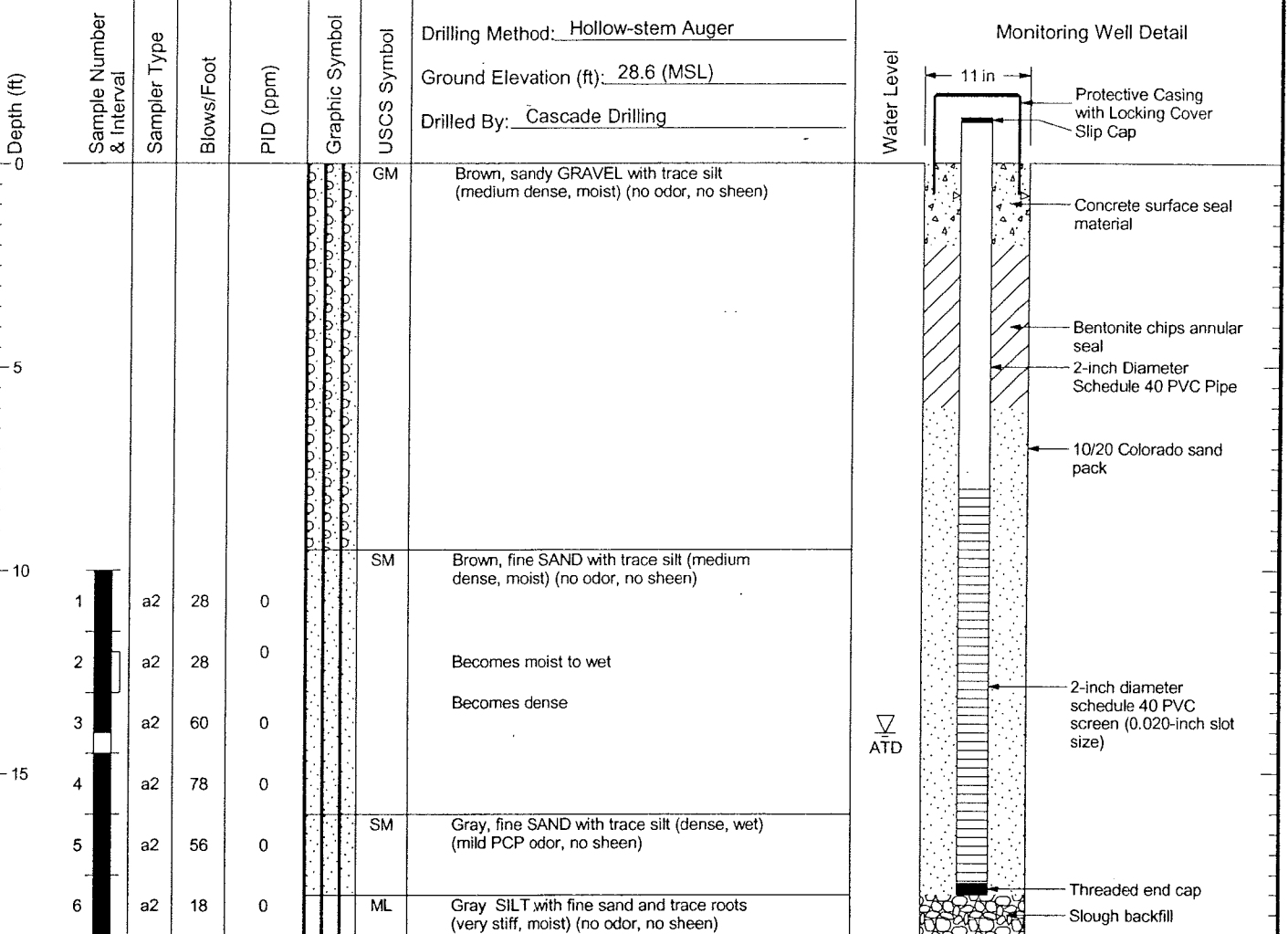
BZTO104(e)023307

OX7S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 09/18/03
Total Depth of Boring = 19.0 ft.

Monitoring Well Completed 09/18/03
Elevation at Top of Protective Casing = 31.06 ft.
Elevation at Top of Monitoring Well Casing = 30.68 ft.
Total Depth of Monitoring Well = 18.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.



Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX7S

Figure
A-

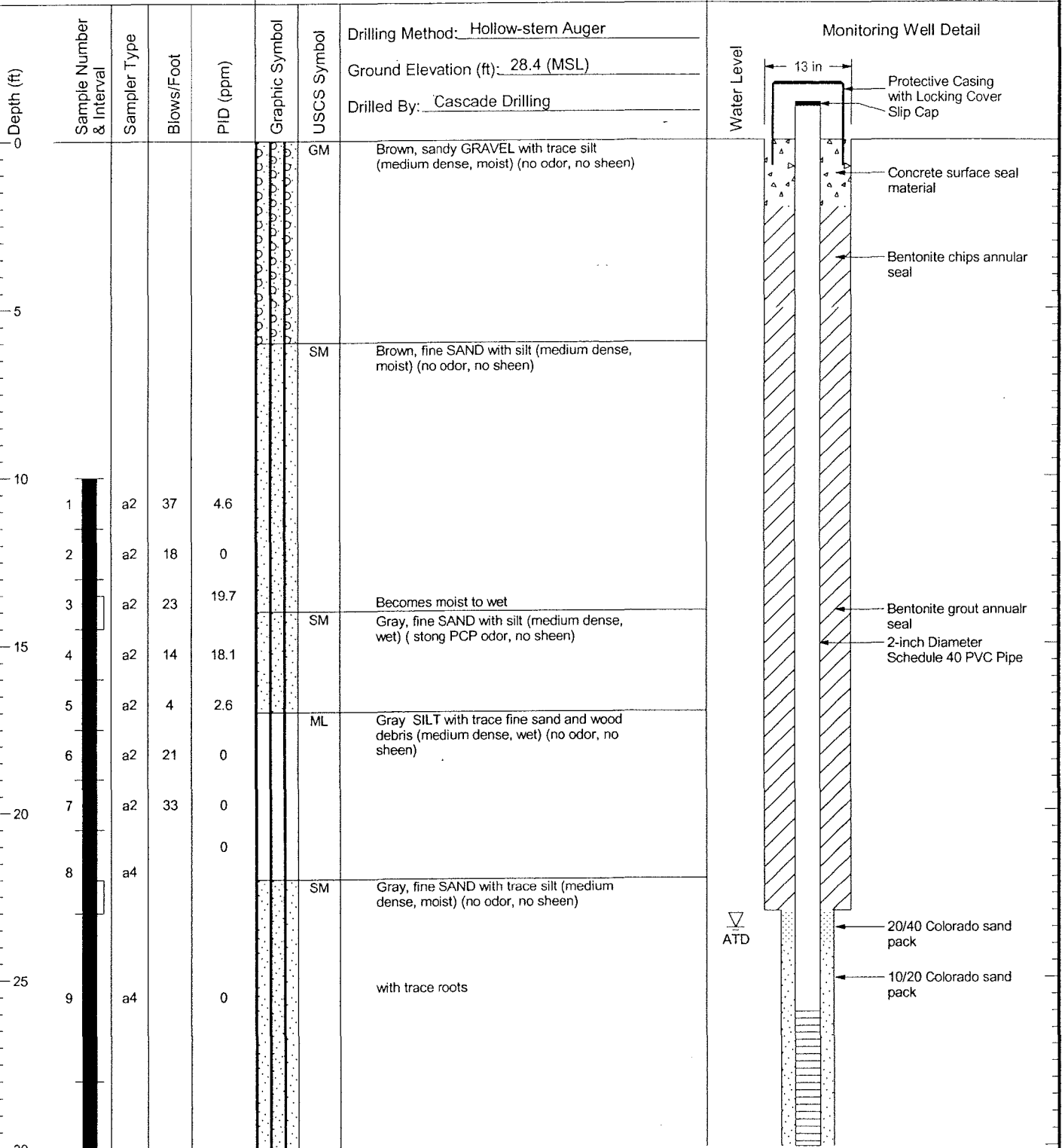
BZTO104(e)023308

OX8D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

231001.121 12/3/04 I:\MODELING\GINT\PROJECTS\231001.GPJ WELL LOG



Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX8D

Figure
A-
(1 of 2)

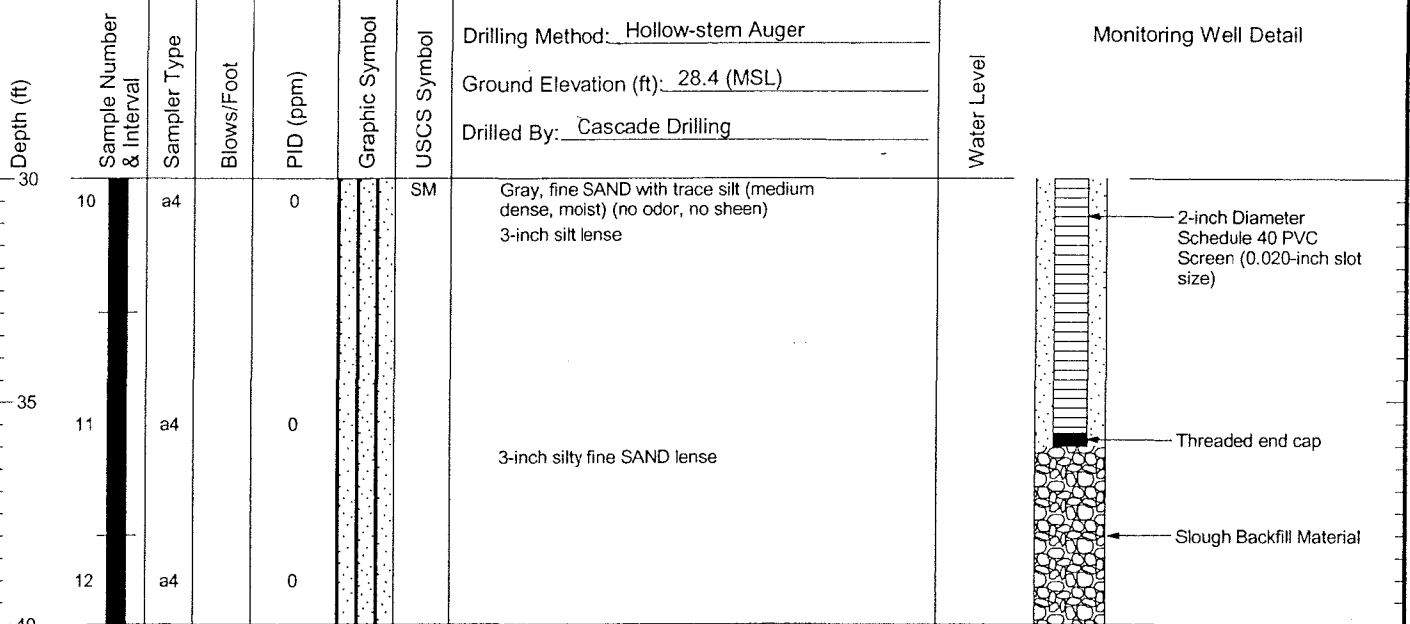
BZTO104(e)023309

OX8D

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 09/16/03
Total Depth of Boring = 40.0 ft.

Monitoring Well Completed 09/16/03
Elevation at Top of Protective Casing = 31.09 ft.
Elevation at Top of Monitoring Well Casing = 30.84 ft.
Total Depth of Monitoring Well = 36.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure

A-
(2 of 2)



LANDAU
ASSOCIATES

Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX8D

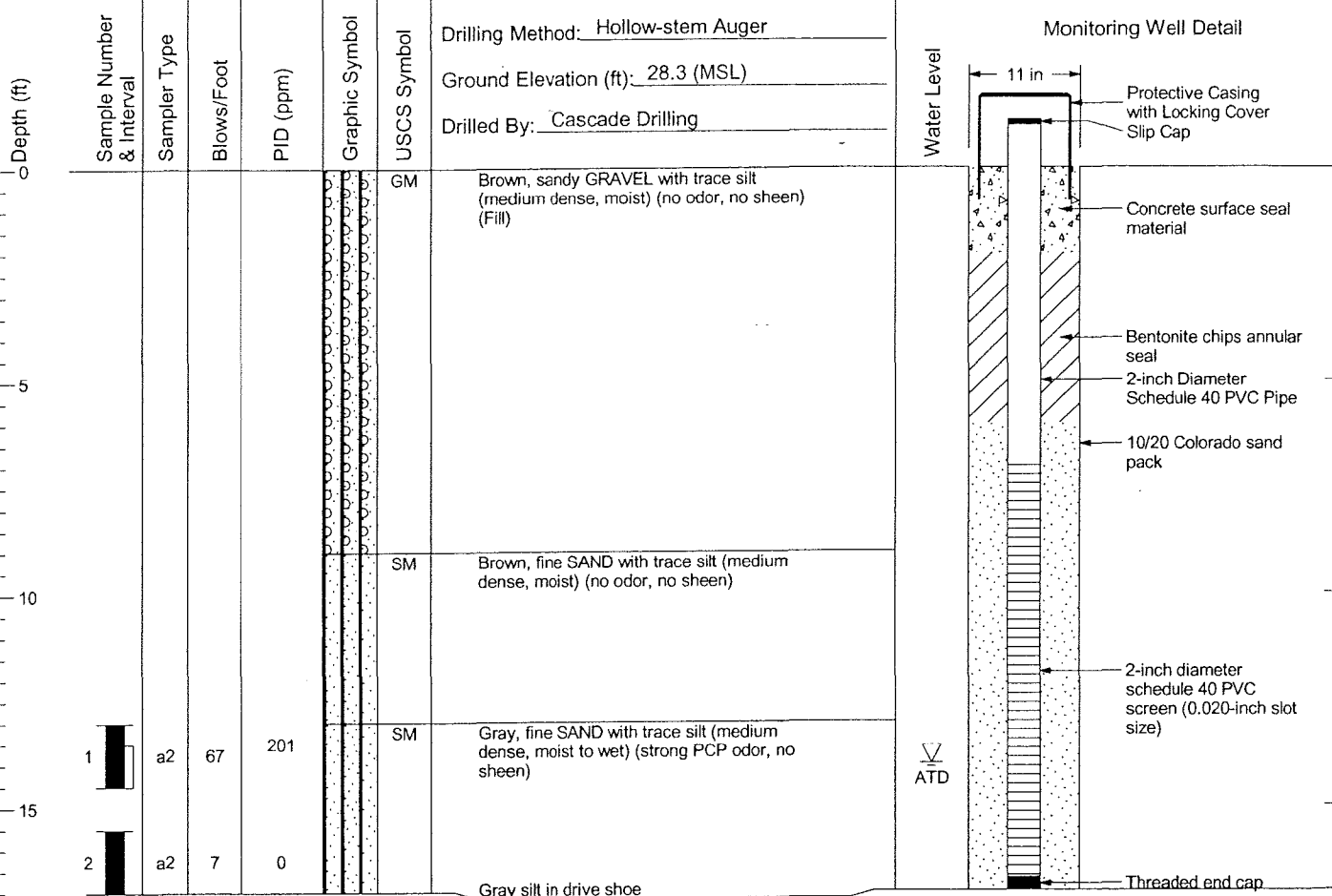
BZTO104(e)023310

OX8S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 09/16/03
Total Depth of Boring = 17.0 ft.

Monitoring Well Completed 09/16/03
Elevation at Top of Protective Casing = 31.05 ft.
Elevation at Top of Monitoring Well Casing = 30.74 ft.
Total Depth of Monitoring Well = 17.0 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure
A-



Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX8S

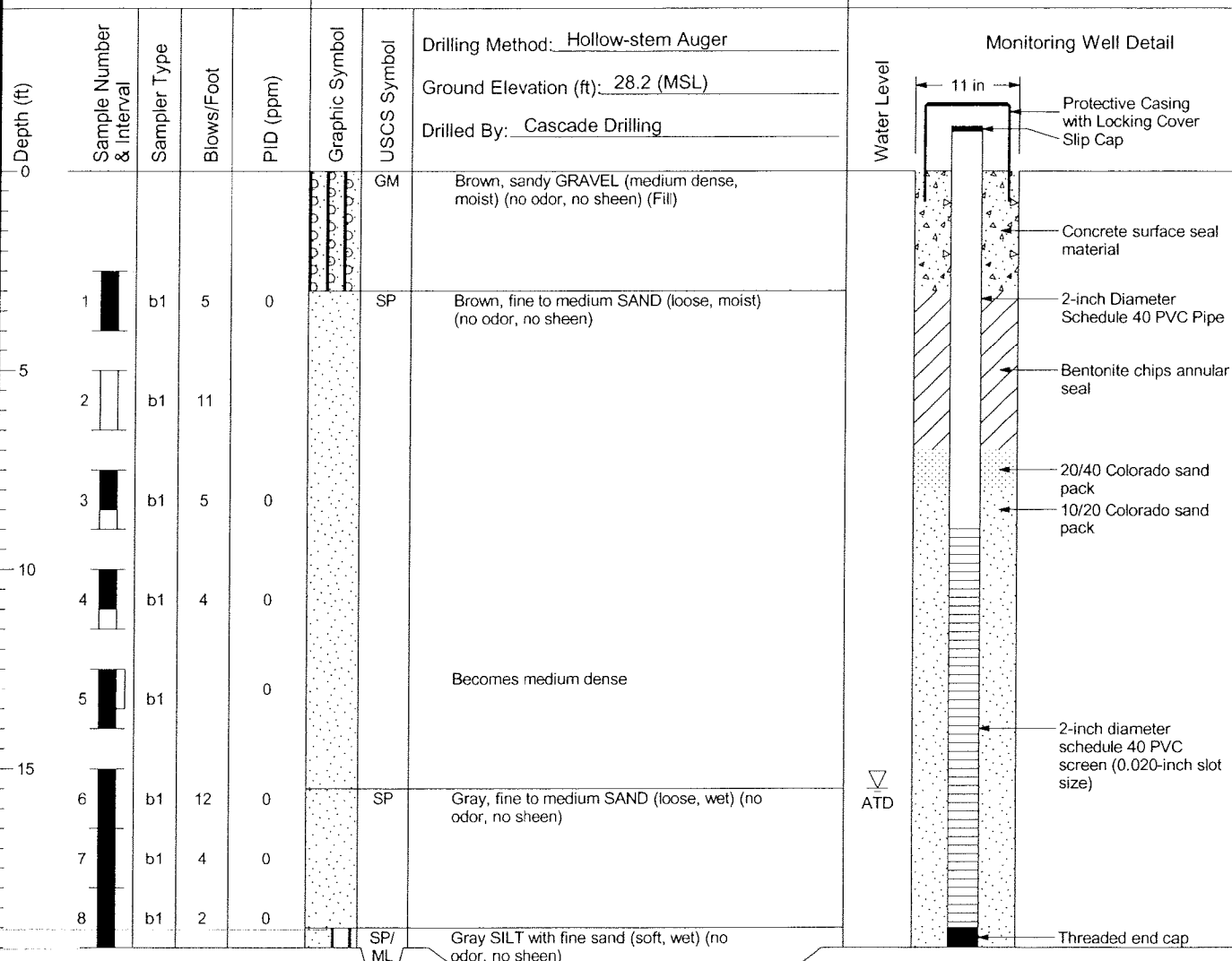
BZTO104(e)023311

OX9S

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 07/14/04
Total Depth of Boring = 19.5 ft.

Monitoring Well Completed 07/04/04
Total Depth of Monitoring Well = 19.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

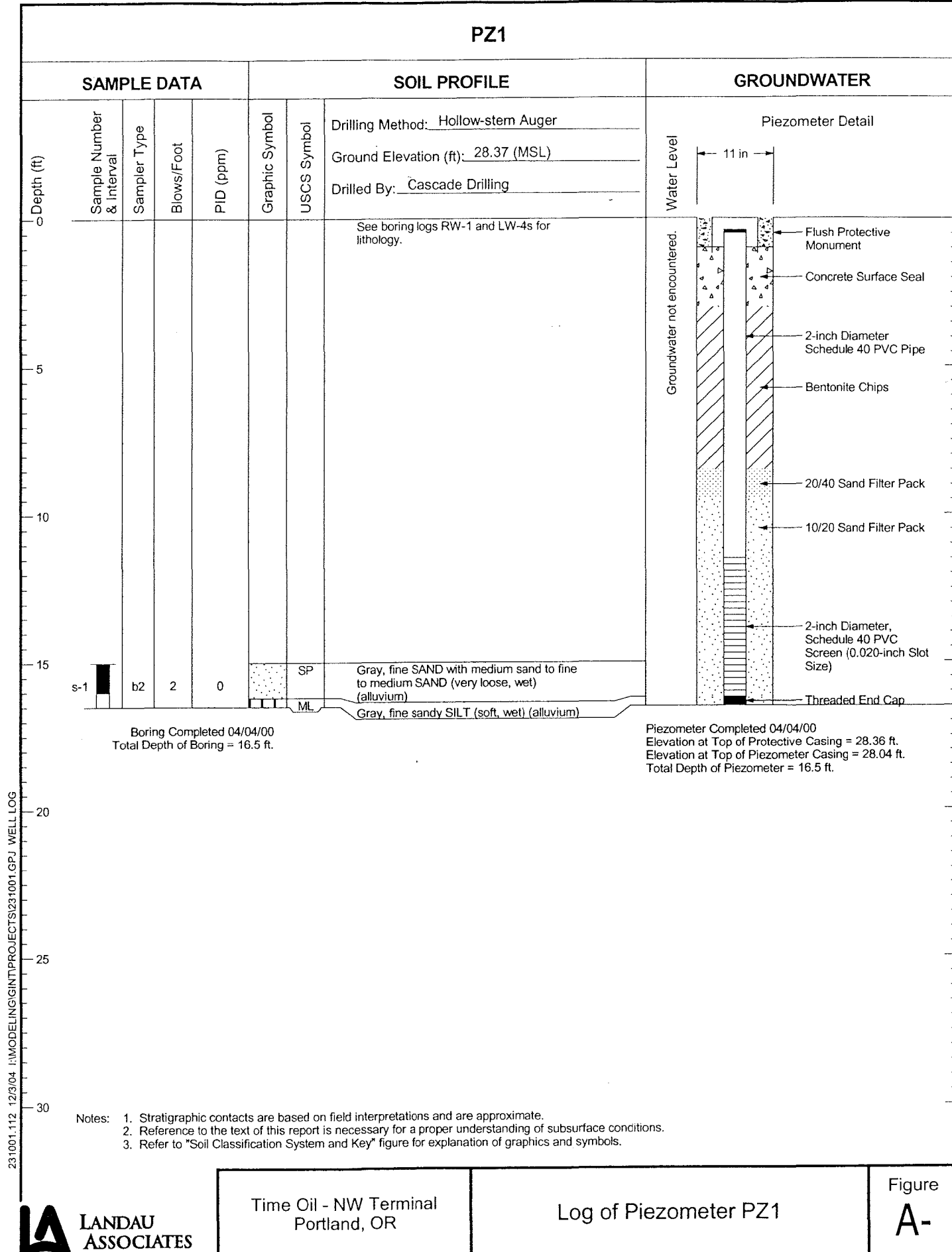


Time Oil - NW Terminal
Portland, OR

Log of Monitoring Well OX9S

Figure
A-

BZTO104(e)023312



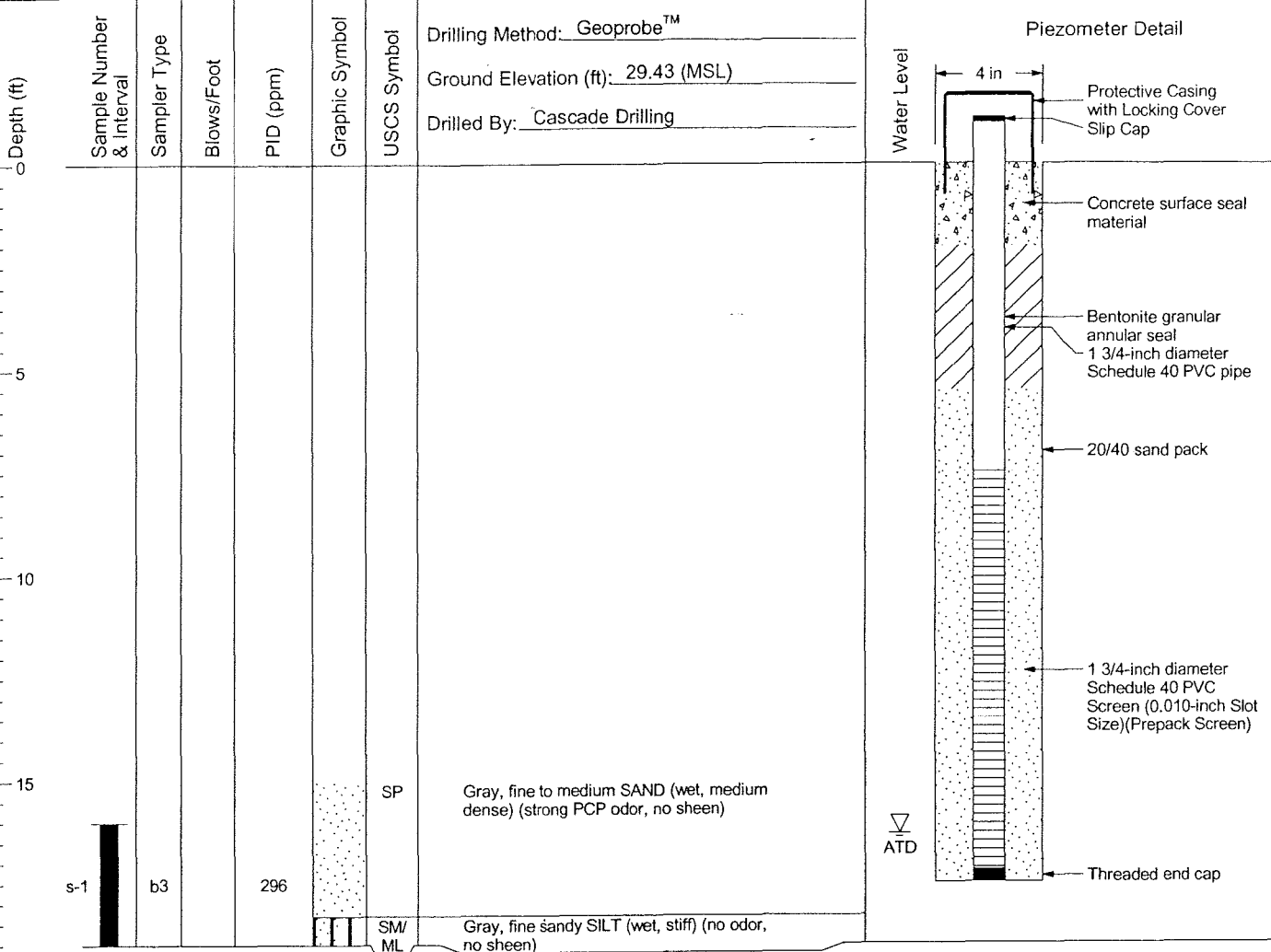
231001.112 12/3/04 I:\MODELING\GINT\PROJECTS\231001.GPJ WELL LOG

PZ2

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



Boring Completed 06/18/02
Total Depth of Boring = 19.0 ft.

Piezometer Completed 06/18/02
Elevation at Top of Protective Casing = 32.22 ft.
Elevation at Top of Piezometer Casing = 31.97 ft.
Total Depth of Piezometer = 19.5 ft.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure

A-

Time Oil - NW Terminal
Portland, OR

Log of Piezometer PZ2

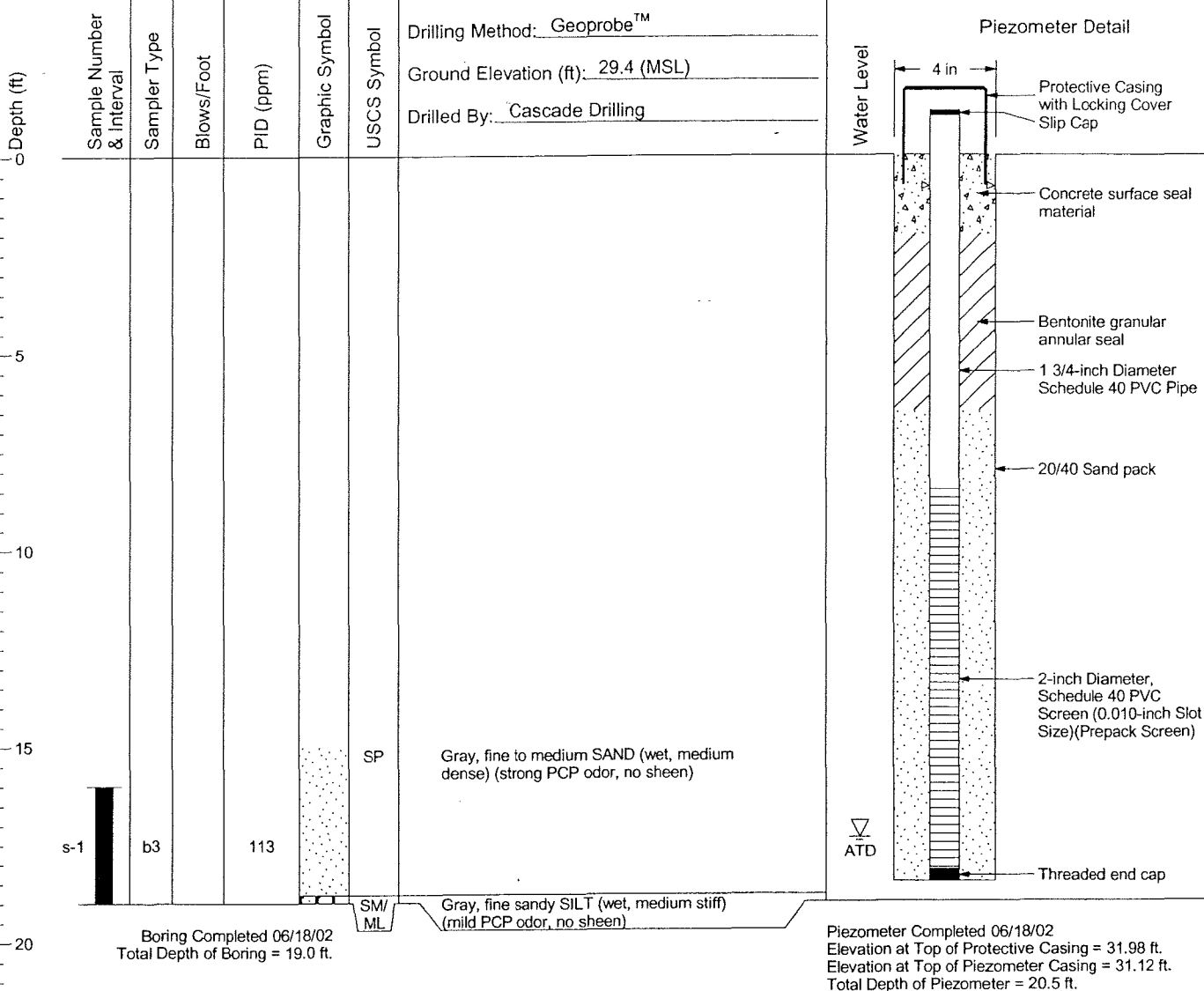


PZ3

SAMPLE DATA

SOIL PROFILE

GROUNDWATER



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.

Figure

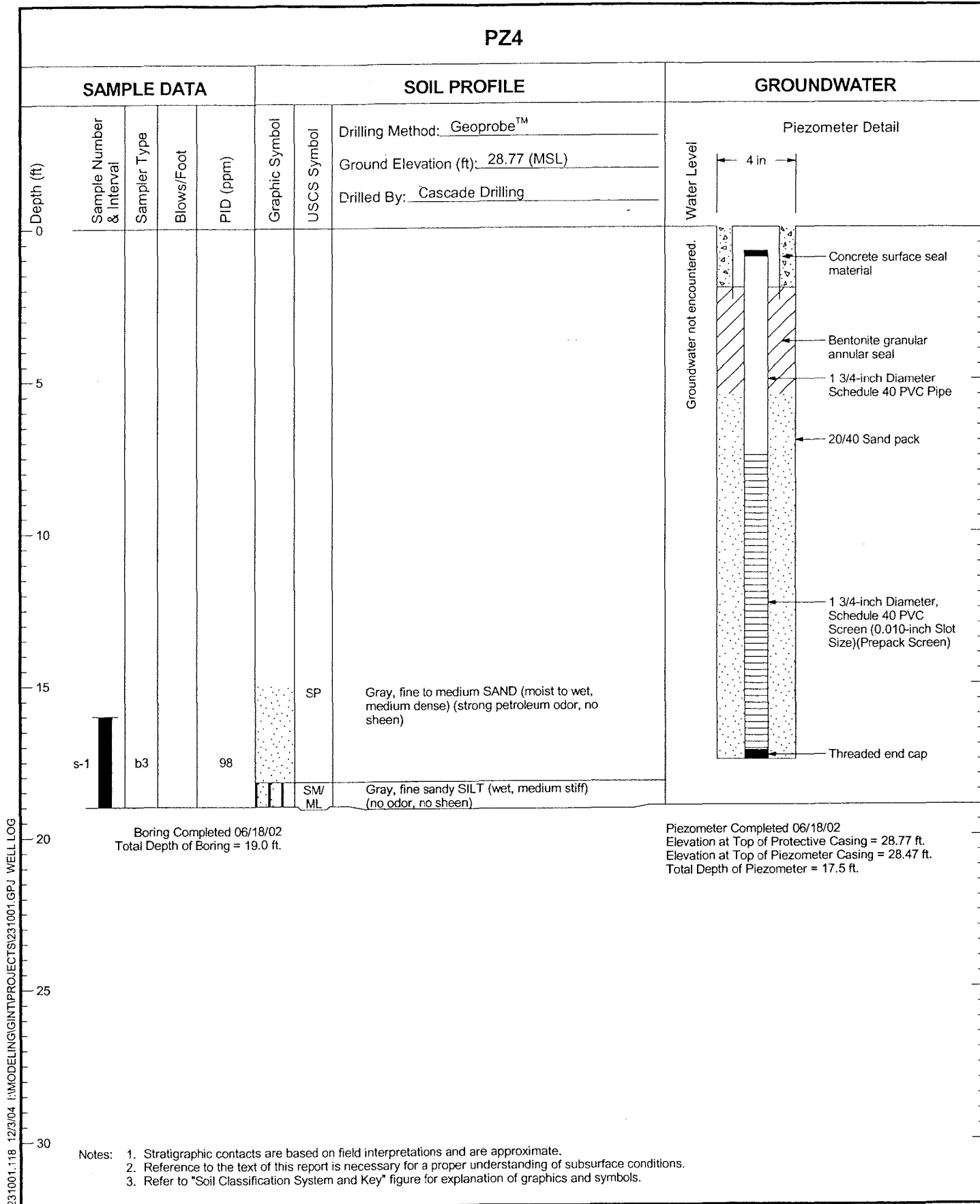
A-

Time Oil - NW Terminal
Portland, OR

Log of Piezometer PZ3



BZTO104(e)023315



Time Oil - NW Terminal
Portland, OR

Log of Piezometer PZ4

Figure
A-

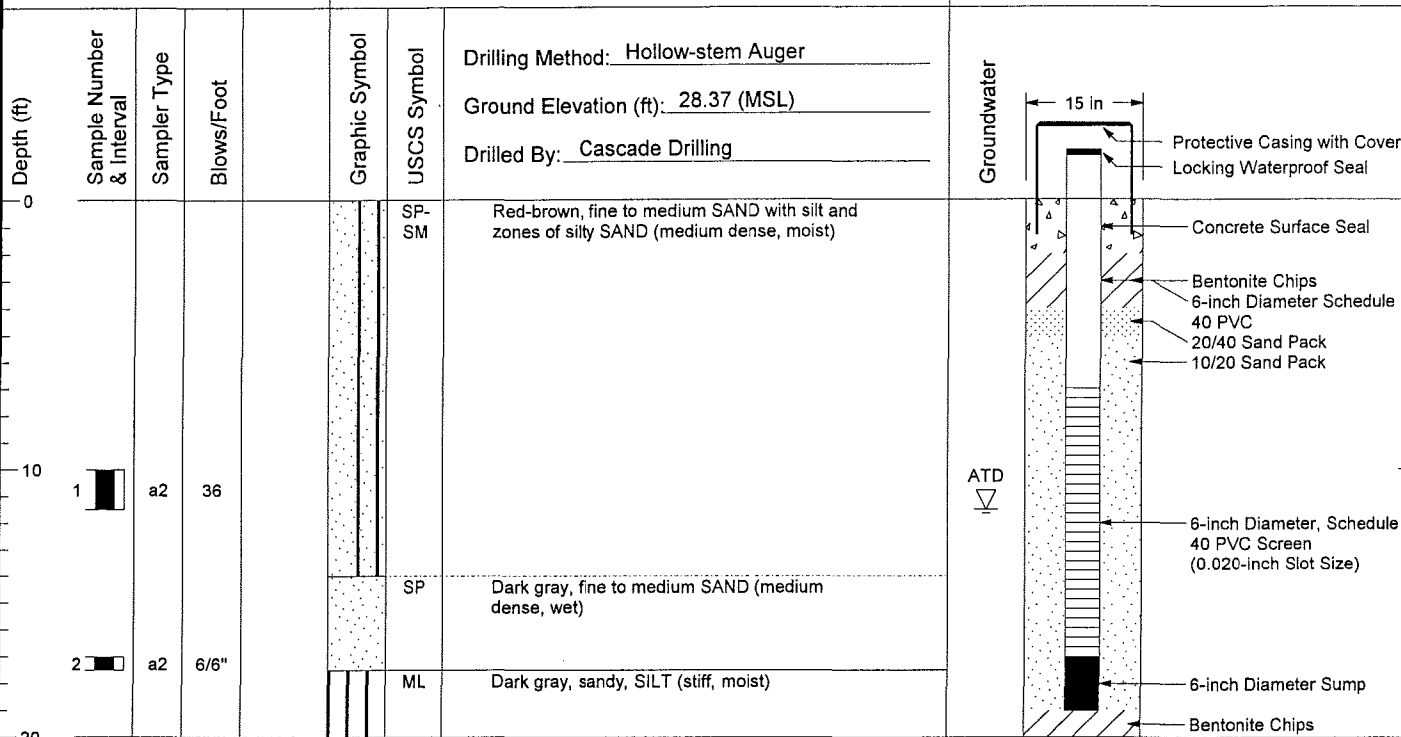
BZTO104(e)023316

RW- 1

SAMPLE DATA

SOIL PROFILE

WELL DETAIL



Boring Completed 04/05/99
Total Depth of Boring = 20.0 ft.

Well Completed 04/05/99
Elevation at Top of Protective Casing = 31.80 ft.
Elevation at Top of Well Casing = 31.46 ft.
Total Depth of Well = 19.0 ft.
Screened Interval = 7 - 17 ft BGS.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings where soil samples were not collected and should be considered approximate (shown with dashes).



Log of Boring and Well RW- 1

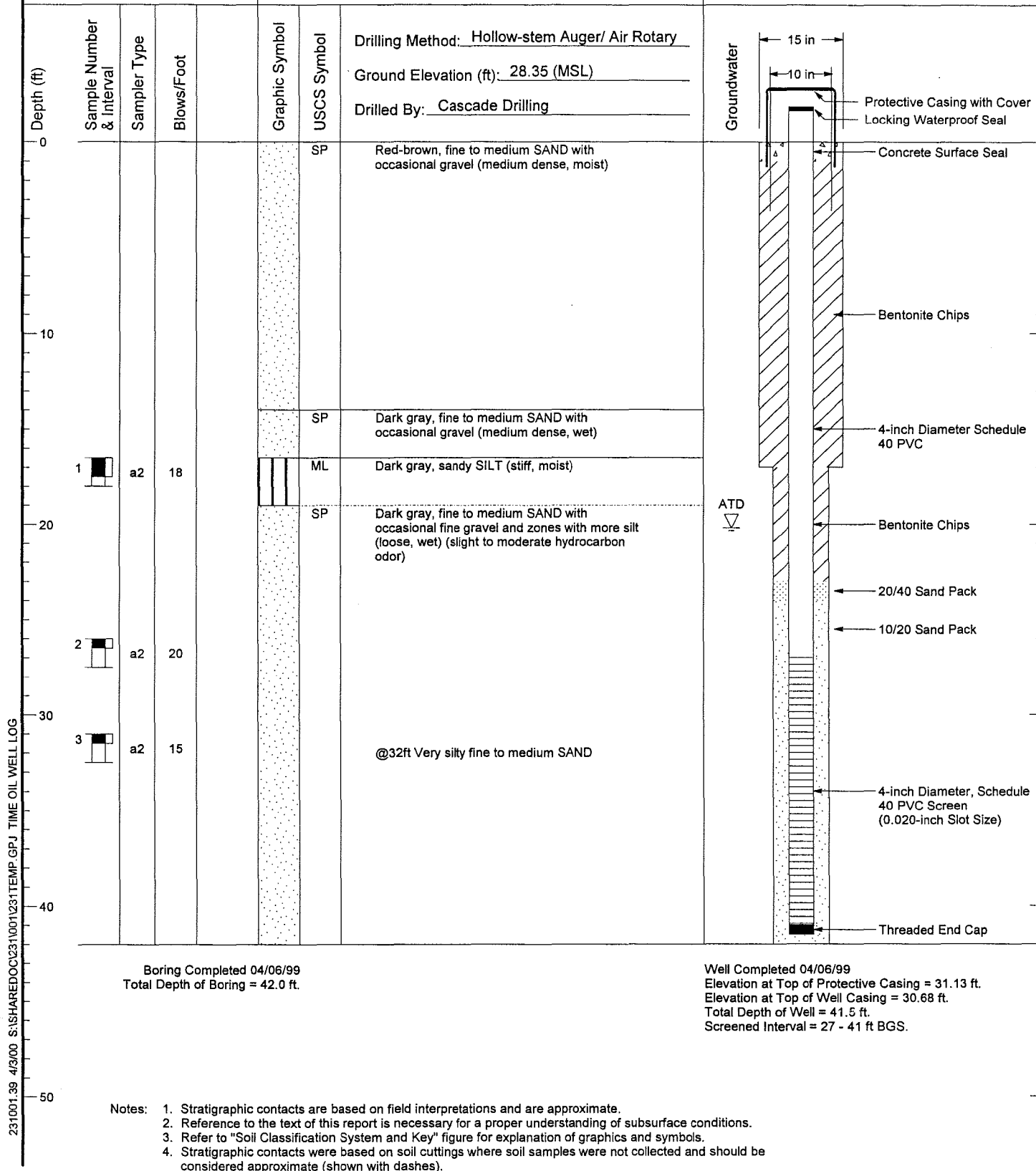
Figure C-53

RW- 2

SAMPLE DATA

SOIL PROFILE

WELL DETAIL



231001.39 4/3/00 S:\SHARED\0231\001\231\TEMP.GPJ TIME OIL WELL LOG



Log of Boring and Well RW- 2

Figure C-54

HISTORICAL WELL LOGS

This appendix contains the following available historical (pre-Phase II Remedial Investigation) well logs:

- Wells 1, 2, 3, 4 , A, B, C, D, E, F, G, H, I, (installed by Time Oil/Riedel; 1985-86)
- Wells B1, B2, J1, J2, J3, G1A (installed by ECOVA; 11/1988 – 01/1999)
- Boring and Monitoring wells N, O, P, Q, R (installed by Landau Associates; 05/1994).

Well logs are not available for wells K, L, and M.

FIGURE 6
CONSTRUCTION DIAGRAM FOR
WELLS 1, 2 AND 3

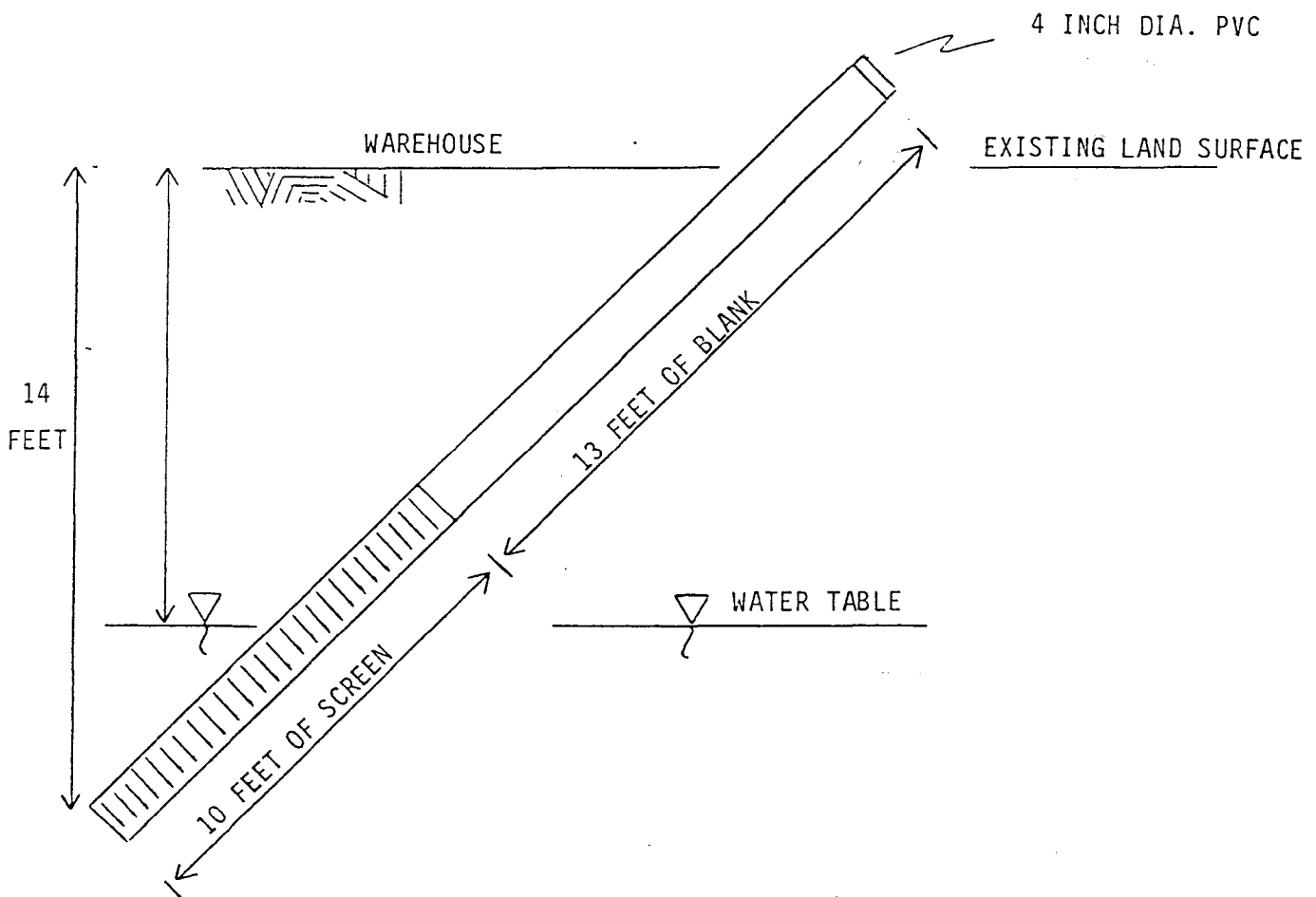
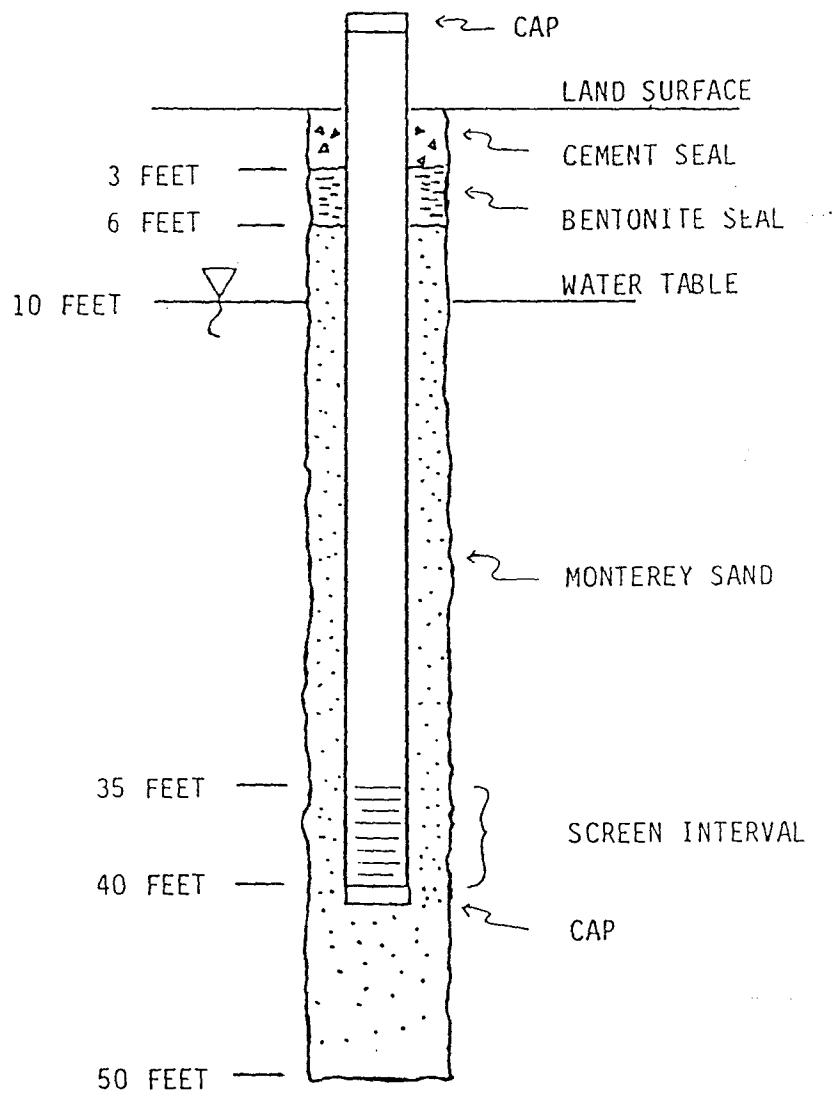
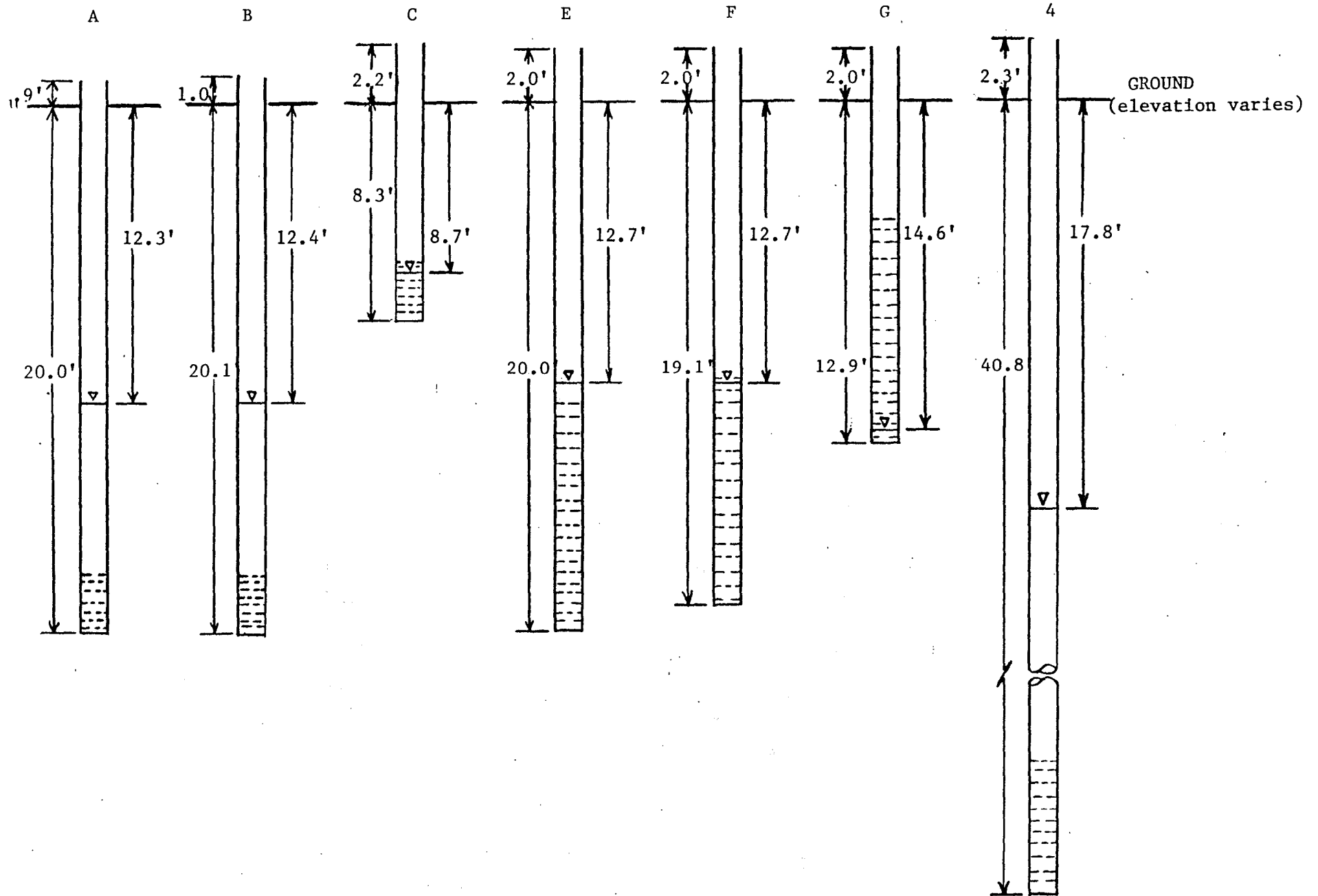


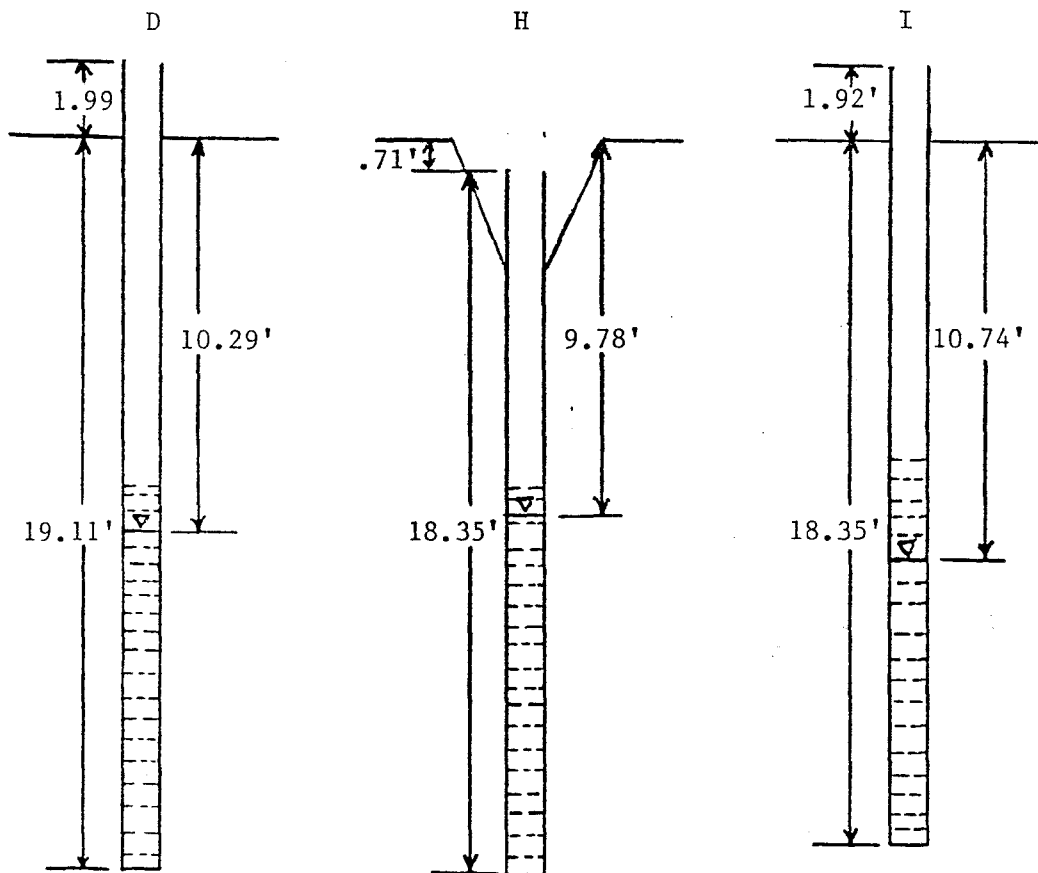
FIGURE 7
CONSTRUCTION DIAGRAM FOR
WELL 4



WELL CONSTRUCTION DETAILS



WELL CONSTRUCTION DETAILS



WELL COMPLETION FORM

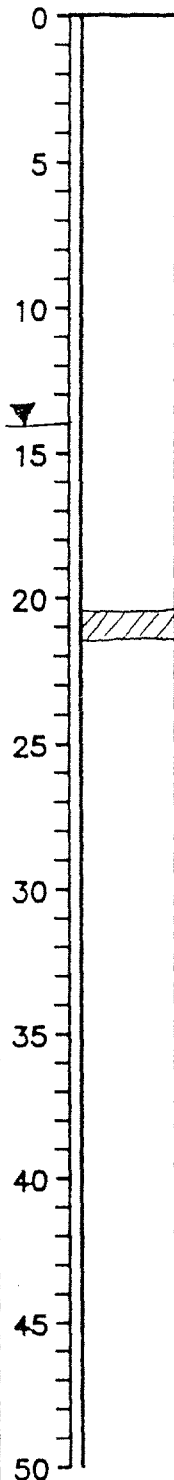
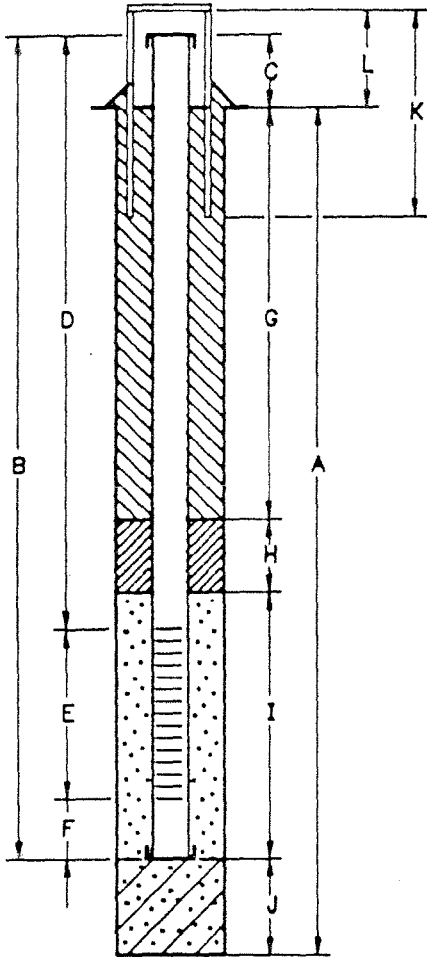
DRILLING METHOD Hand/low stem Auger DATE 11/30/88

WELL COMPLETION

GEOLOGIC LOG

TOP OF CASING ELEVATION 97.54

GROUND SURFACE ELEVATION _____



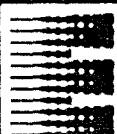
ROAD GRAVEL
dk gray to brown-gray fine to
MEDIUM SAND; minor rock
fragments; well sorted; damp

strong PETROLEUM ODOR

SAME

gray brown SILT to very FINE SAND;
minor organics
TOTAL DEPTH: 22 FT.

- A BORING DEPTH 22 FT.
- B BORING DIAMETER 14 IN.
- B WELL DEPTH 20.5 FT.
- C WELL STICKUP 1.4 FT.
- D BLANK INTERVAL 0 FT. TO 10.5 FT.
- BLANK DIAMETER 4 IN.
- E SCREEN INTERVAL 10.5 FT. TO 20.5 FT.
- SCREEN DIAMETER 4 IN.
- TYPE/SLOT SIZE 0.020" SLOTTED
- F SILT TRAP LENGTH N/A FT.
- G WELL SEAL 8 FT.
- MATERIAL: TYPE II
- H BENTONITE SEAL 8 FT. TO 10.5 FT.
- I SANDPACK 20.5 FT. TO 22 FT.
- TYPE/SIZE AGWA 2
- J BOTTOM SEAL FT. TO FT.
- MATERIAL: NONE
- K PROTECTIVE CASING 4 FT.
- W/ LOCKING CAP
- L STICKUP 1.5 FT.



ECOVA

JOB NUMBER 821401 WELL/BORING NUMBER B1

DRAWN DML APPROVED _____ DATE _____ ENGINEER/GEOLOGIST/HYDROLOGIST _____

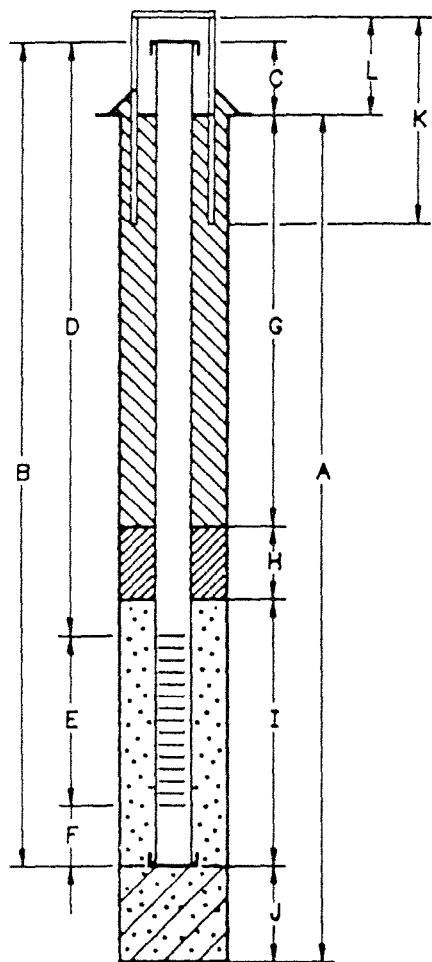
WELL COMPLETION FORM

DRILLING METHOD Hollow Stem Auger

DATE 11/30/88

WELL COMPLETION

TOP OF CASING ELEVATION 98.02

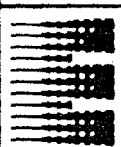
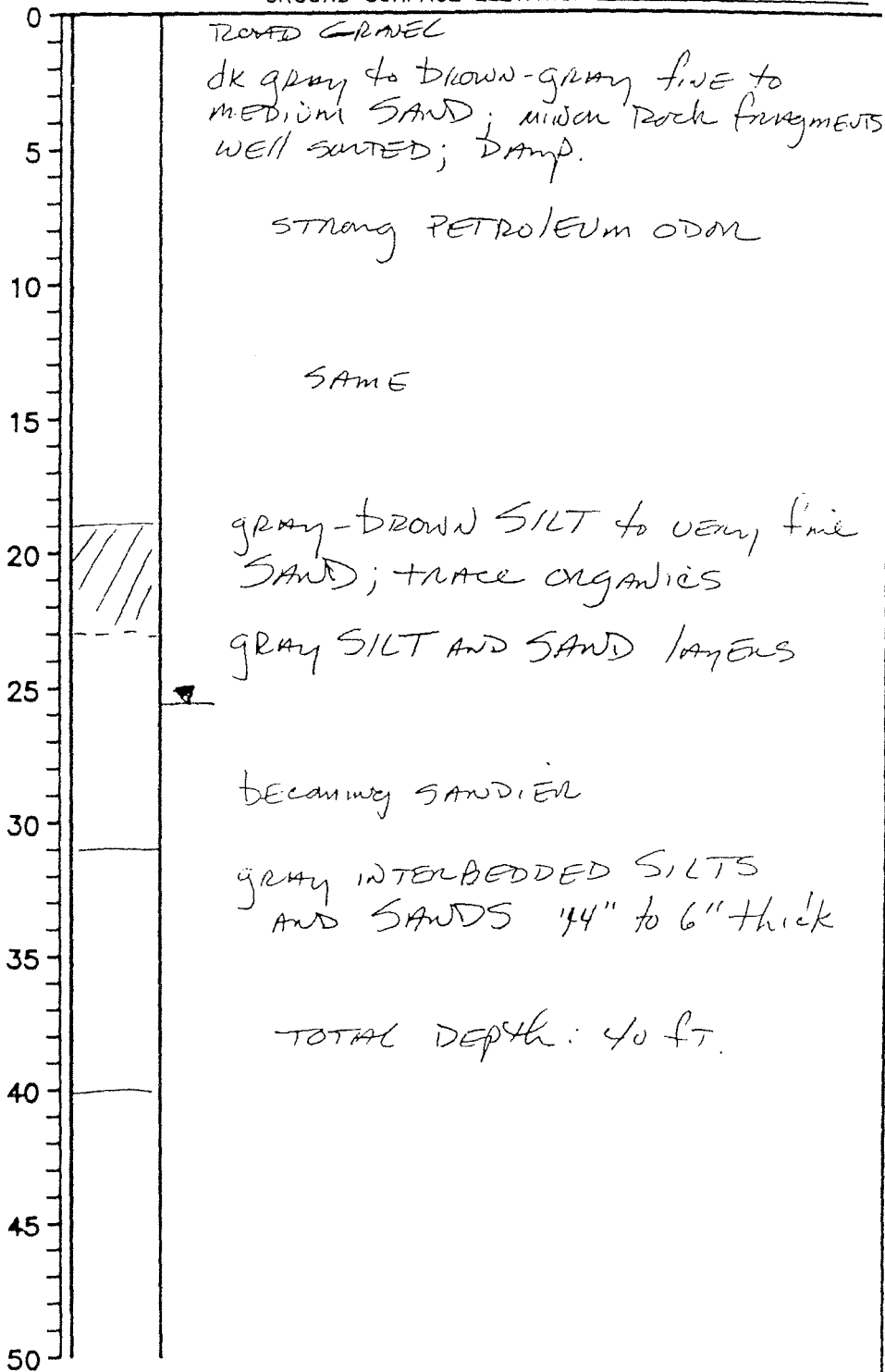


conductor casing 0-19 ft.

- A BORING DEPTH _____ FT.
- B BORING DIAMETER _____ IN.
- B WELL DEPTH _____ FT.
- C WELL STICKUP _____ FT.
- D BLANK INTERVAL _____ FT. TO _____ FT.
- E SCREEN INTERVAL _____ FT. TO _____ FT.
- F SILT TRAP LENGTH _____ FT.
- G WELL SEAL _____ FT.
- H BENTONITE SEAL _____ FT. TO _____ FT.
- I SANDPACK _____ FT. TO _____ FT.
- J BOTTOM SEAL _____ FT. TO _____ FT.
- K PROTECTIVE CASING _____ FT.
- L STICKUP _____ FT.

GEOLOGIC LOG

GROUND SURFACE ELEVATION _____



ECOVA

TIME OIL - PORTLAND

JOB NUMBER 821401

WELL/BORING NUMBER B2

DRAWN DML

APPROVED _____

DATE _____

ENGINEER/GEOLOGIST/HYDROLOGIST _____

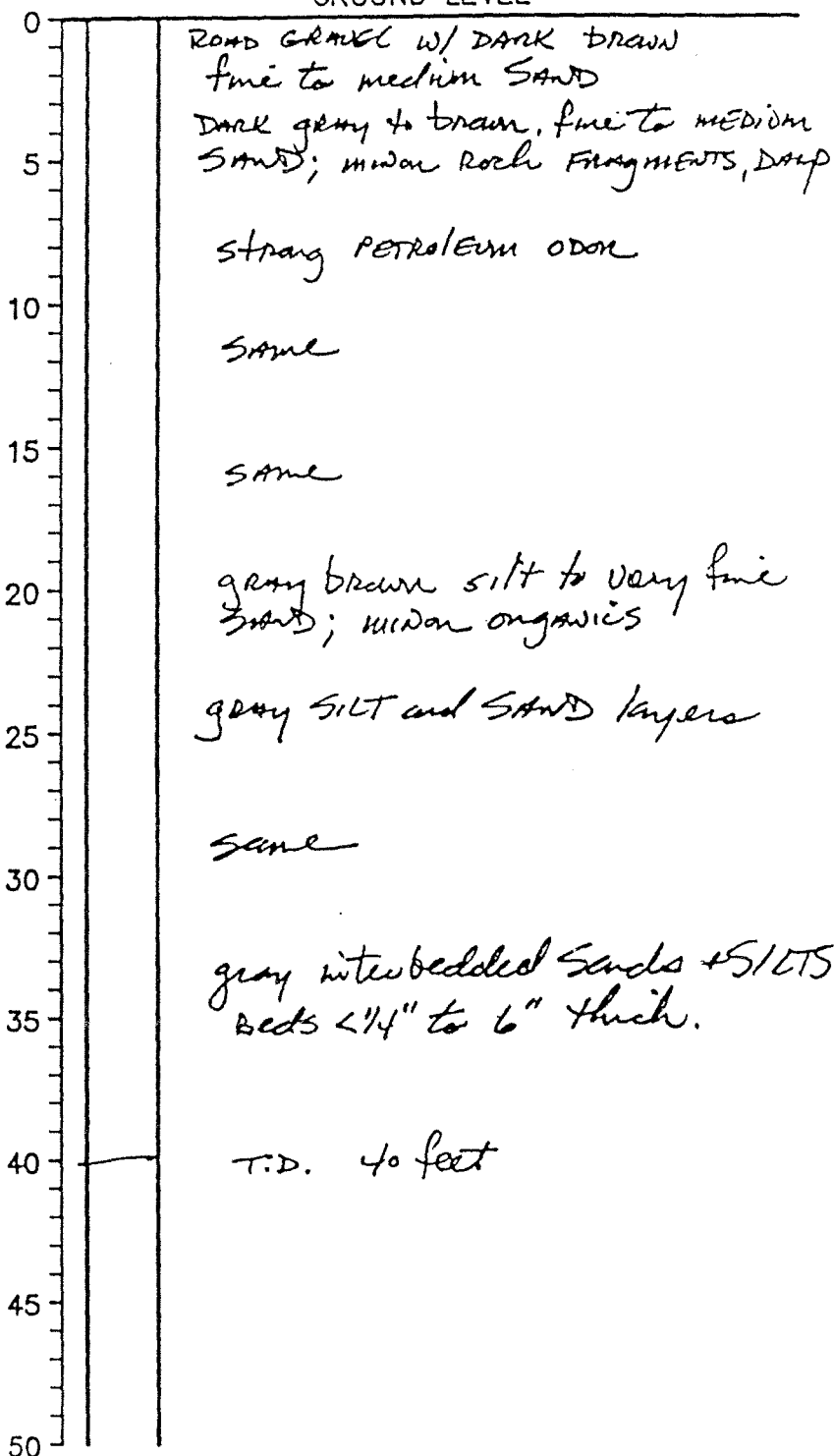
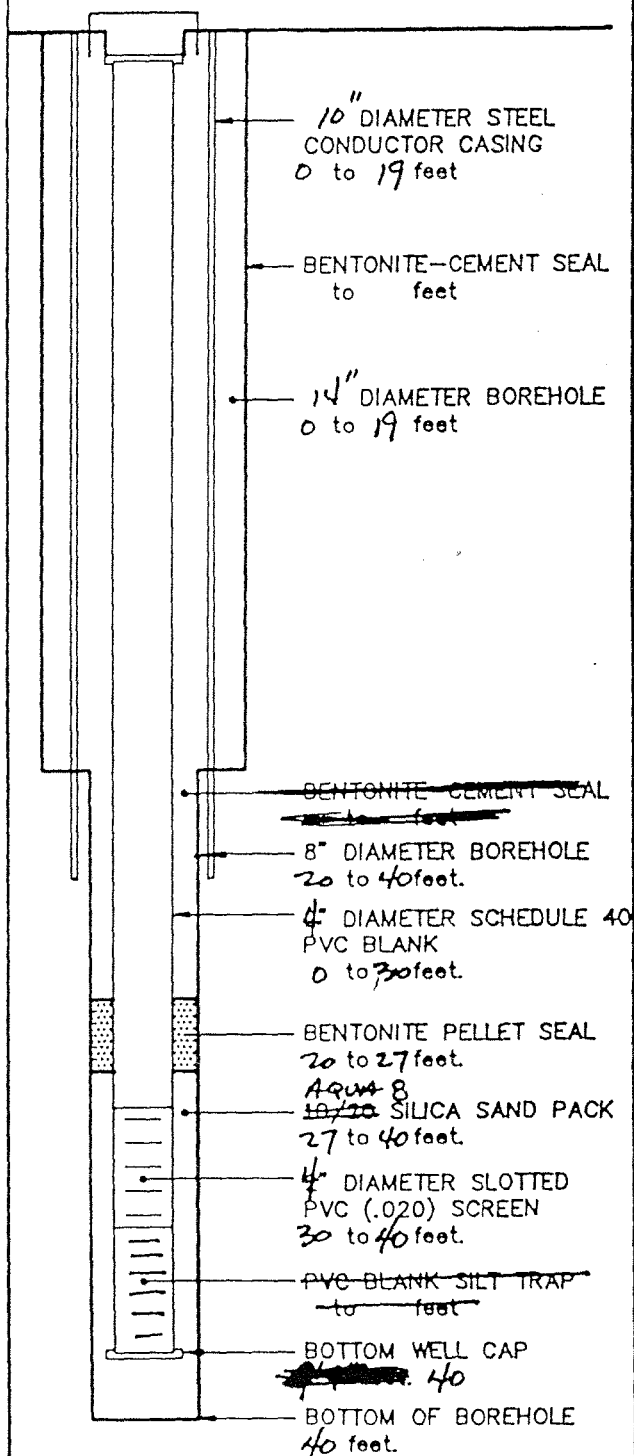
TOP OF CASING ELEVATION _____

GROUND SURFACE ELEVATION _____

WELL COMPLETION DETAILS

LOG OF BORING

GROUND LEVEL



E C O V A



TME oil / PORTLAND

 BORING NUMBER 02

DRAWN

JOB NUMBER

APPROVED

DATE

ENGINEER/GEOLOGIST/HYDROLOGIST

821401

DMLANCE

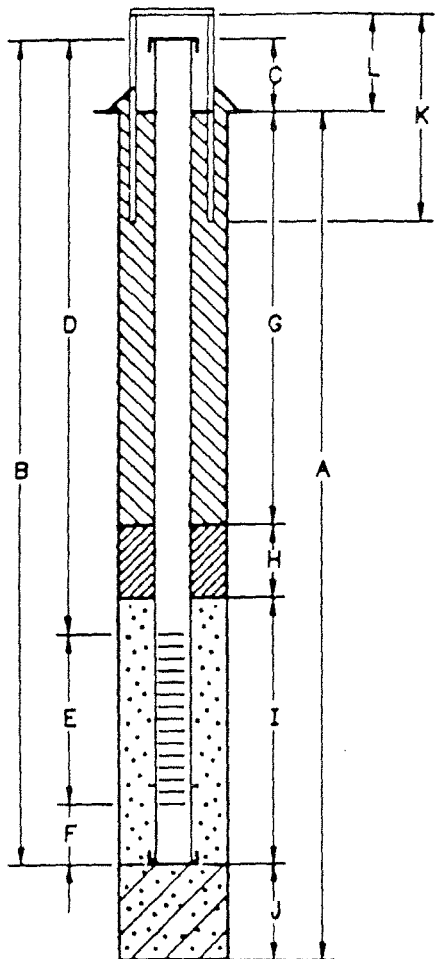
WELL COMPLETION FORM

DRILLING METHOD _____

DATE _____

WELL COMPLETION

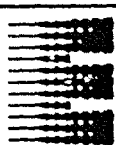
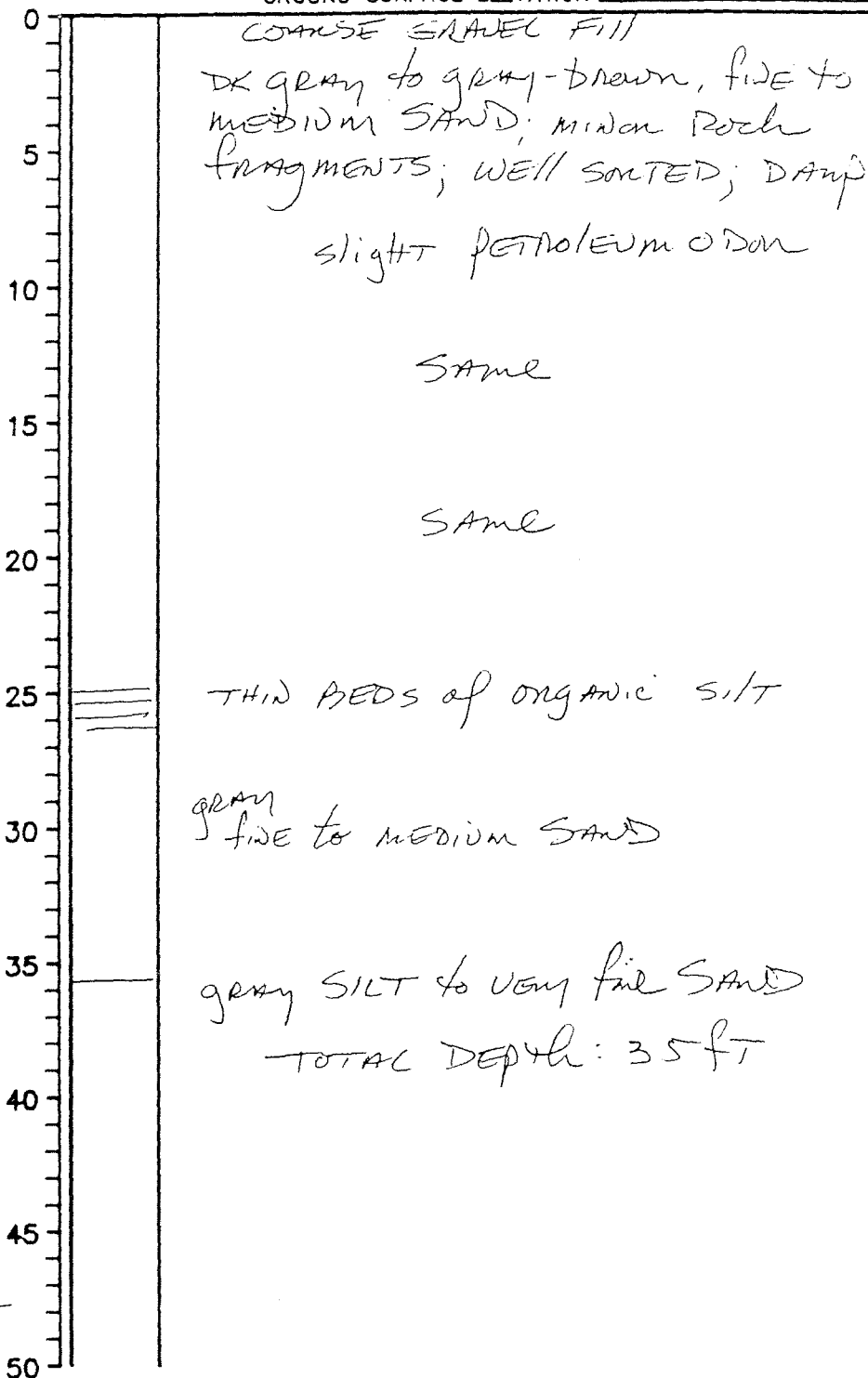
TOP OF CASING ELEVATION _____



A BORING DEPTH 35 FT.
 BORING DIAMETER 6 IN.
 B WELL DEPTH 35 FT.
 C WELL STICKUP 1.5 FT.
 D BLANK INTERVAL 0 FT. TO 25 FT.
 BLANK DIAMETER 2 IN.
 E SCREEN INTERVAL 25 FT. TO 35 FT.
 SCREEN DIAMETER 2 IN.
 TYPE/SLOT SIZE .020 SLOTTED
 F SILT TRAP LENGTH N/A FT.
 G WELL SEAL 22 FT.
 MATERIAL: TYPE II GEL
 H BENTONITE SEAL 22 FT. TO 28 FT.
 I SANDPACK 24 FT. TO 31 FT.
 TYPE/SIZE AQUA-8
 J BOTTOM SEAL _____ FT. TO _____ FT.
 MATERIAL: None
 K PROTECTIVE CASING 4 FT.
 W/ LOCKING CAP
 L STICKUP 1.6 FT.

GEOLOGIC LOG

GROUND SURFACE ELEVATION _____



E C O V A

TIME Oil - Portland

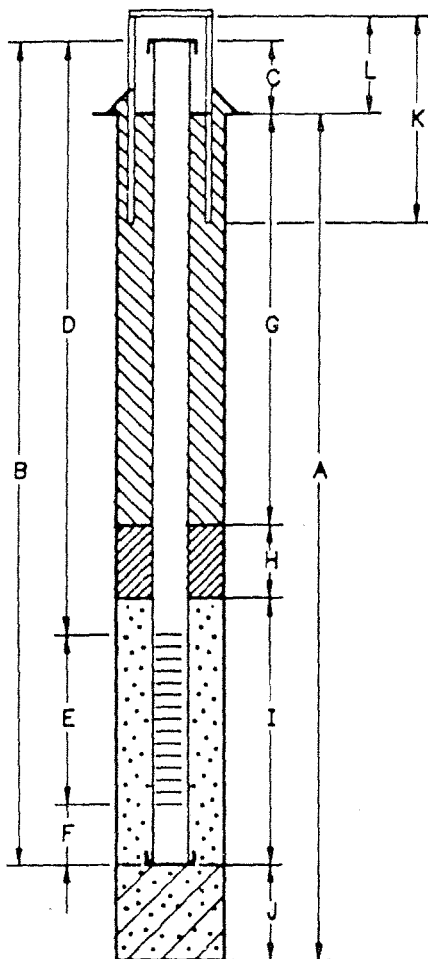
JOB NUMBER 821401 WELL/BORING NUMBER G1
 DRAWN DML APPROVED _____ DATE _____
 ENGINEER / GEOLOGIST / HYDROLOGIST

WELL COMPLETION FORM

 DRILLING METHOD Hollow Stem AUGER

 DATE 11/29/88

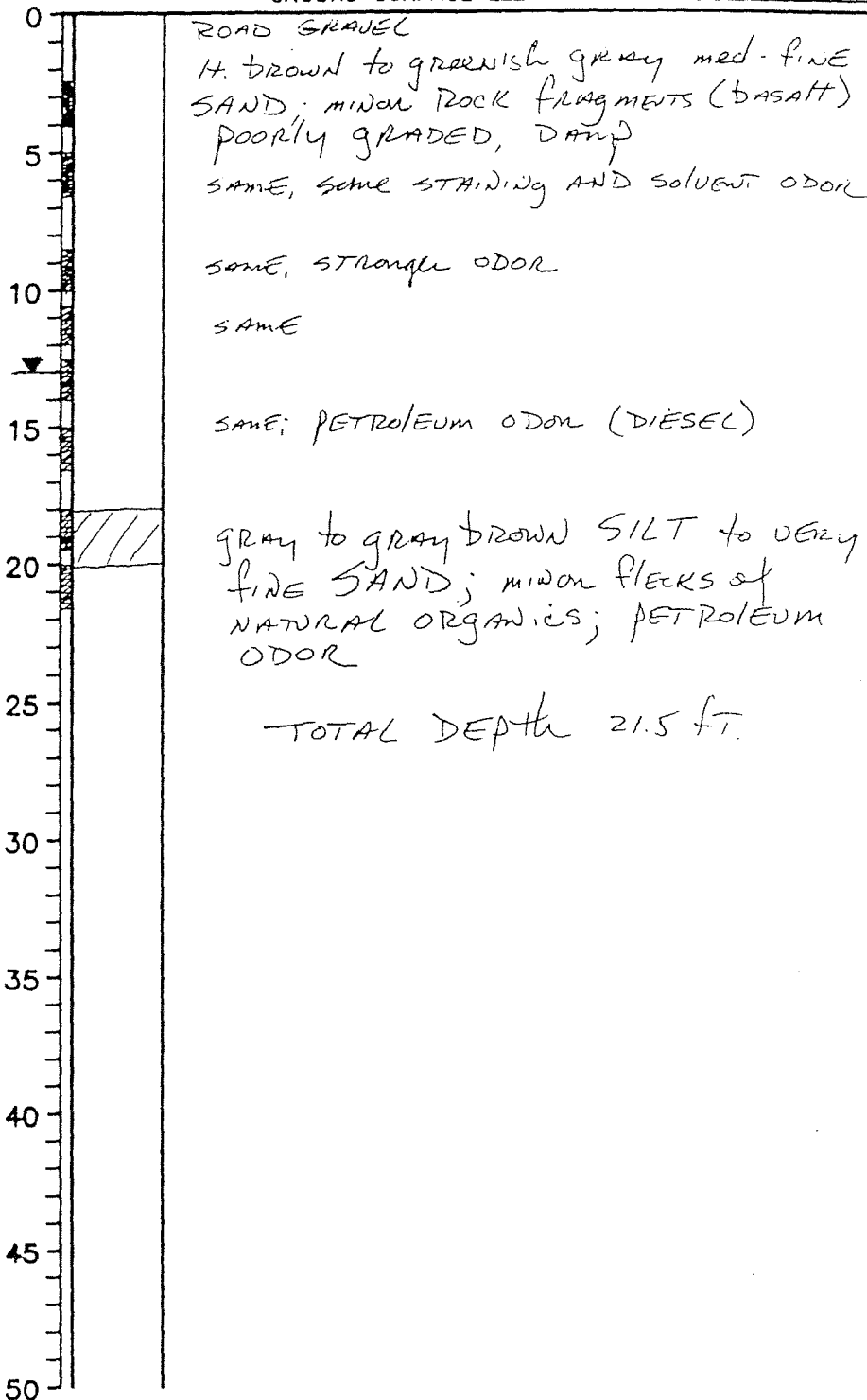
WELL COMPLETION

 TOP OF CASING ELEVATION 97.48 ft


A BORING DEPTH 20 FT.
 BORING DIAMETER 14 IN.
 B WELL DEPTH 20 FT.
 C WELL STICKUP 19 FT.
 D BLANK INTERVAL 0 FT. TO 10 FT.
 BLANK DIAMETER 4 IN.
 E SCREEN INTERVAL 10 FT. TO 20 FT.
 SCREEN DIAMETER 4 IN.
 TYPE/SLOT SIZE .020" SLOTTED
 F SILT TRAP LENGTH N/A FT.
 G WELL SEAL 7 FT.
 MATERIAL: TYPE II CEMENT
 H BENTONITE SEAL 7 FT. TO 8.5 FT.
 I SANDPACK 8.5 FT. TO 20 FT.
 TYPE/SIZE AQUA 8
 J BOTTOM SEAL 0 FT. TO 0 FT.
 MATERIAL: None
 K PROTECTIVE CASING 4 FT.
 W/ LOCKING CAP
 L STICKUP 1.6 FT.

GEOLOGIC LOG

GROUND SURFACE ELEVATION _____



TIME OIL - PORTLAND - North TERMINAL

 JOB NUMBER 821401 WELL/BORING NUMBER 41

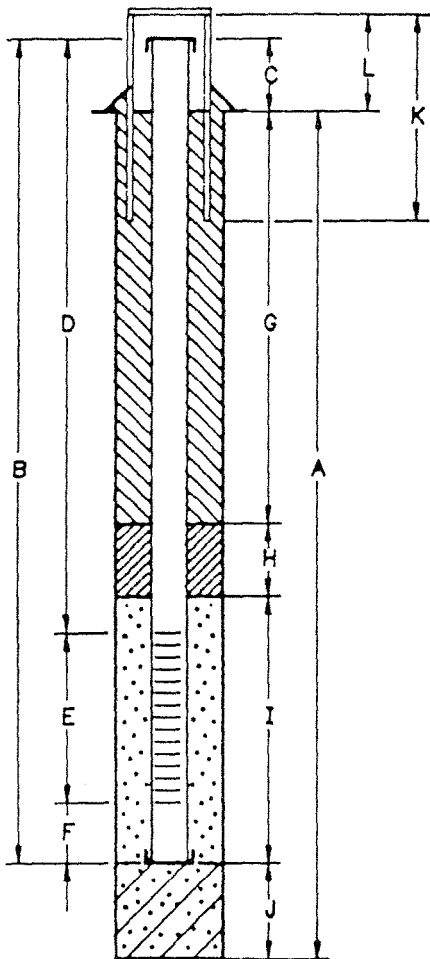
 DRAWN DMC APPROVED _____ DATE _____ ENGINEER/GEOLOGIST/HYDROLOGIST _____

WELL COMPLETION FORM

DRILLING METHOD Hollow Stem Auger DATE 1/3/89

WELL COMPLETION

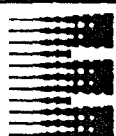
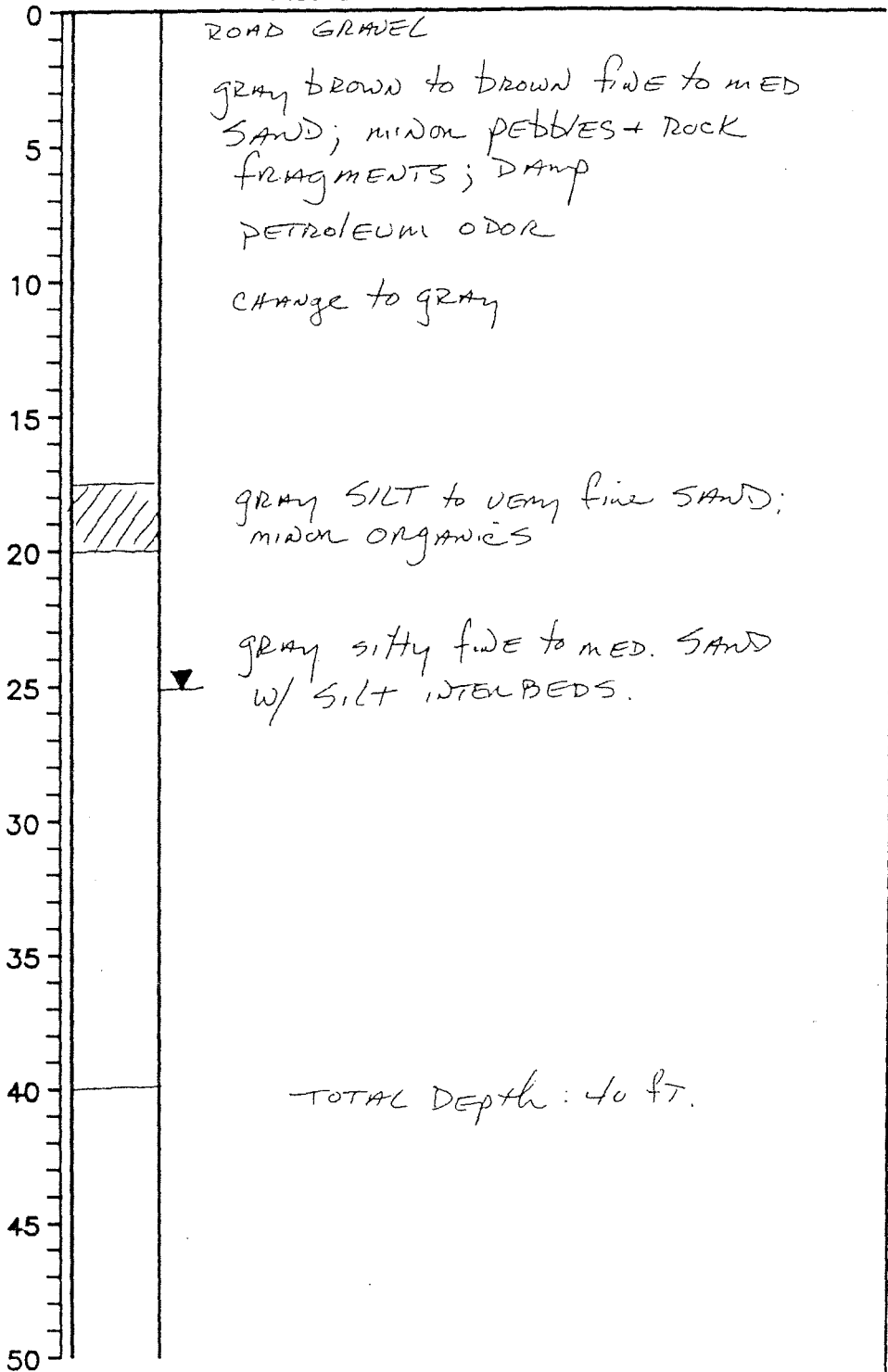
TOP OF CASING ELEVATION 97.44



A BORING DEPTH 40.5 FT.
 BORING DIAMETER B IN.
 B WELL DEPTH 42 FT.
 C WELL STICKUP 1.4 FT.
 D BLANK INTERVAL FT. TO FT.
 BLANK DIAMETER IN.
 E SCREEN INTERVAL 30 FT. TO 40 FT.
 SCREEN DIAMETER 4 IN.
 TYPE/SLOT SIZE .020" SIBTER
 F SILT TRAP LENGTH N/A FT.
 G WELL SEAL 20 FT.
 MATERIAL: TYPE II CEMENT
 H BENTONITE SEAL 20 FT. TO 27.5 FT.
 I SANDPACK 27.5 FT. TO 40 FT.
 TYPE/SIZE AQUA B
 J BOTTOM SEAL FT. TO FT.
 MATERIAL: None
 K PROTECTIVE CASING 4 FT.
 W/ LOCKING CAP
 L STICKUP 1.6 FT.

GEOLOGIC LOG

GROUND SURFACE ELEVATION _____



ECOVA

TIME OIL - PORTLAND

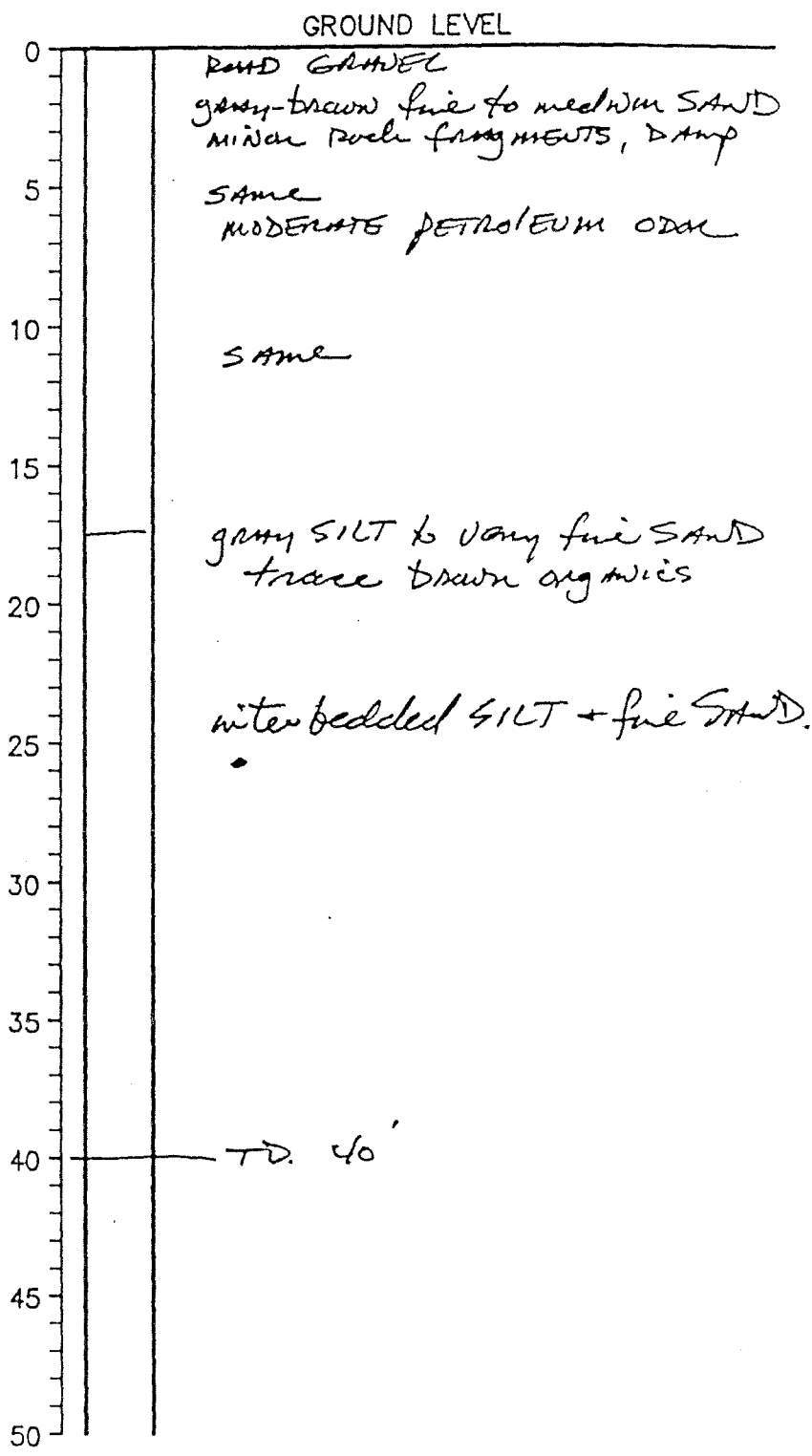
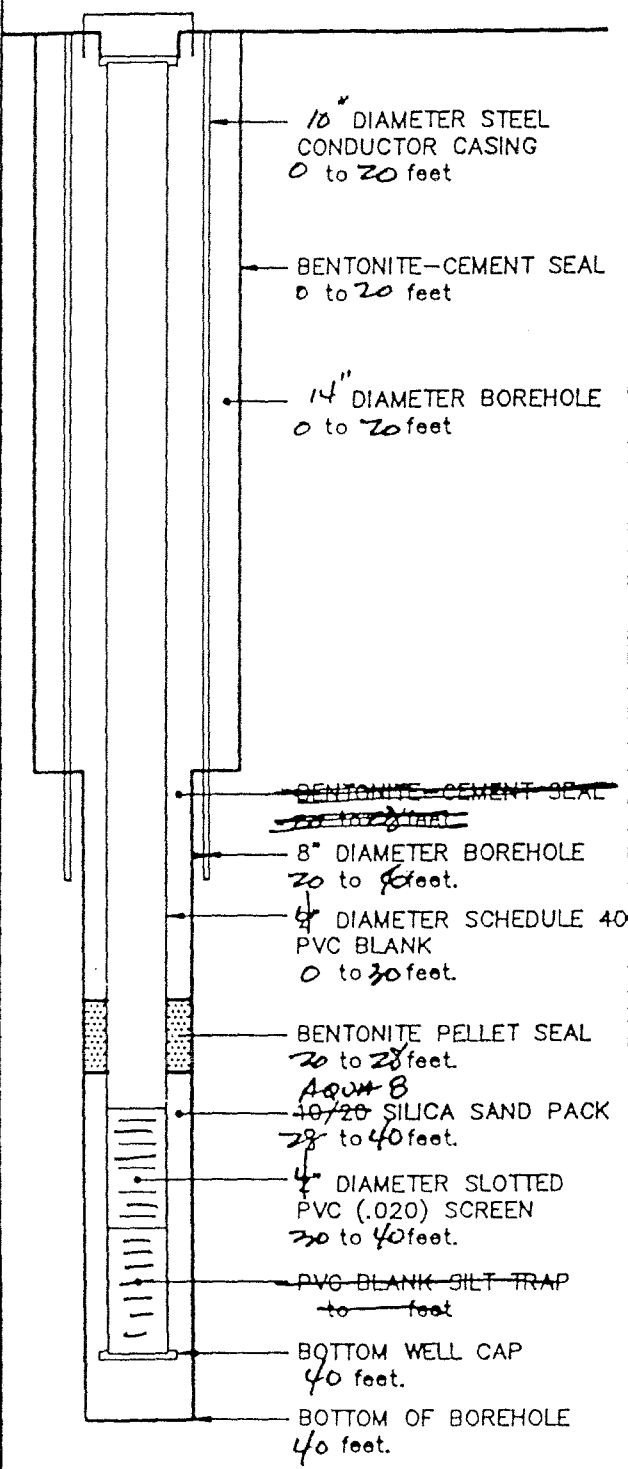
JOB NUMBER 821401 WELL/BORING NUMBER J2
 DRAWN DAIL APPROVED _____ DATE _____ ENGINEER/GEOLOGIST/HYDROLOGIST _____

TOP OF CASING ELEVATION 97.44

GROUND SURFACE ELEVATION _____

WELL COMPLETION DETAILS

LOG OF BORING



Time oil / Portland

BORING NUMBER J2

DRAWN _____ JOB NUMBER 821401 APPROVED _____ DATE _____ ENGINEER/GEOLOGIST/HYDROLOGIST DM Lane

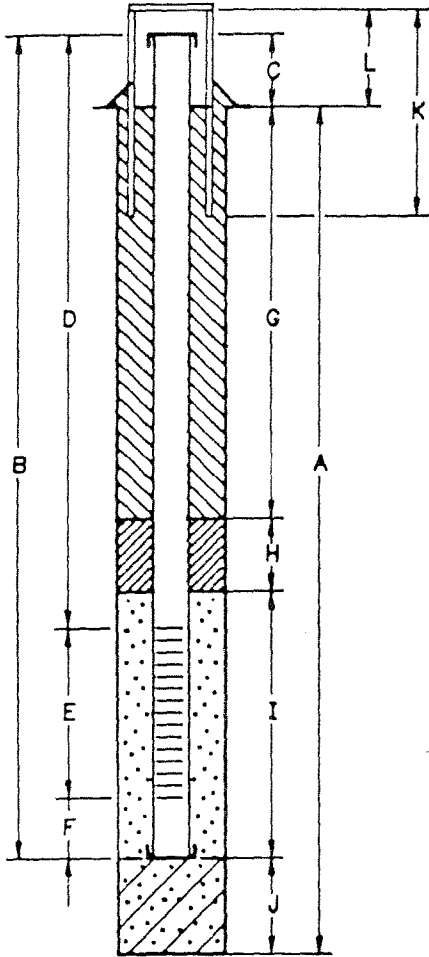
WELL COMPLETION FORM

DRILLING METHOD Hollow Stem Auger

DATE 12/1/88

WELL COMPLETION

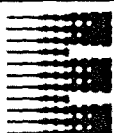
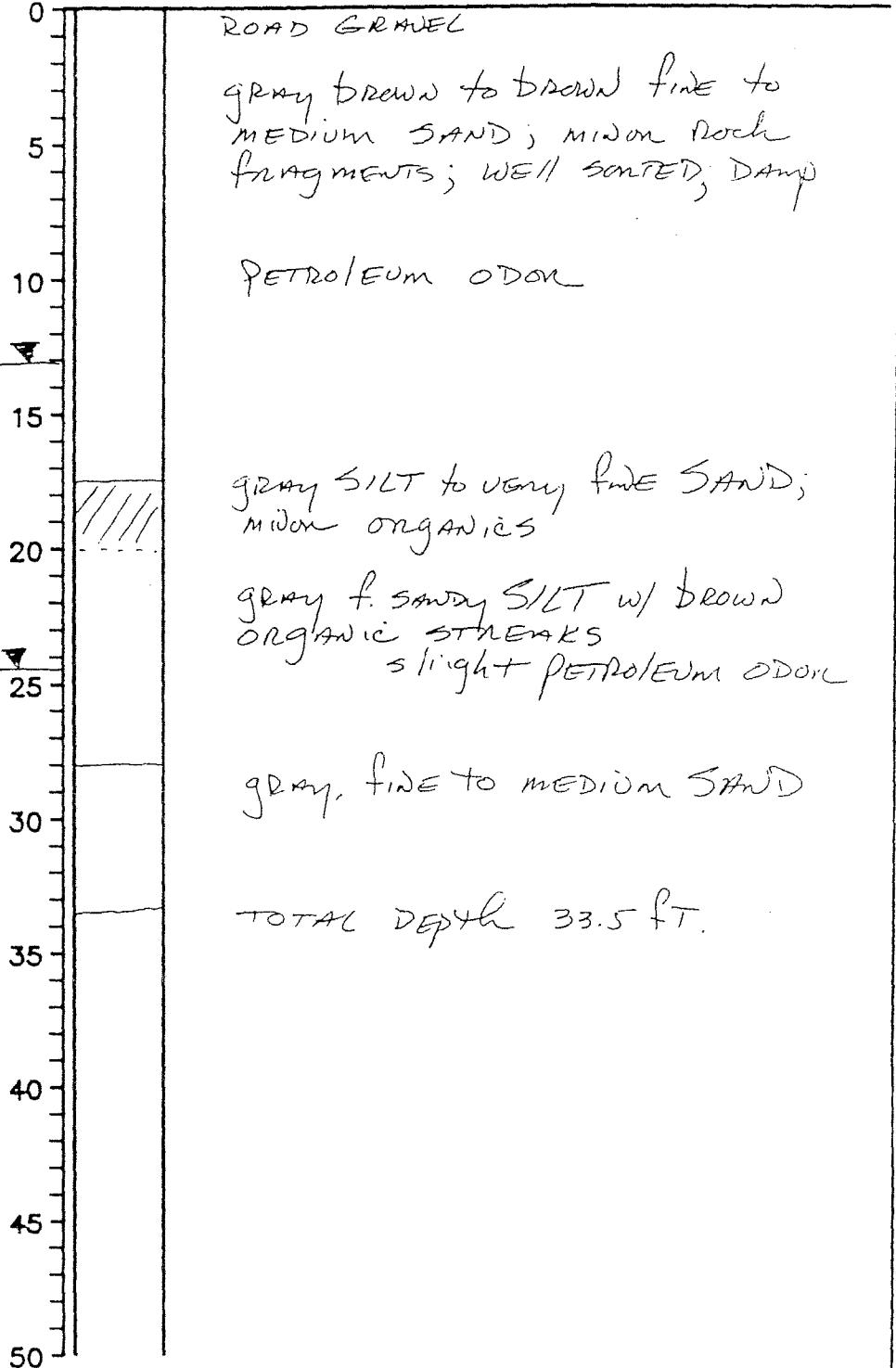
TOP OF CASING ELEVATION 97.39



A BORING DEPTH 33.5 FT.
 BORING DIAMETER 8 IN.
 B WELL DEPTH 35.1 FT.
 C WELL STICKUP 1.7 FT.
 D BLANK INTERVAL 17 FT. TO 28 FT.
 BLANK DIAMETER 4 IN.
 E SCREEN INTERVAL 28 FT. TO 32 FT.
 SCREEN DIAMETER 4 IN.
 TYPE/SLOT SIZE .020" SLOTTED
 F SILT TRAP LENGTH N/A FT.
 G WELL SEAL 19.5 FT.
 MATERIAL: TYPE II CEMENT
 H BENTONITE SEAL 4.5 FT. TO 21 FT.
 I SANDPACK 27 FT. TO 33.5 FT.
 TYPE/SIZE ADVA B
 J BOTTOM SEAL FT. TO FT.
 MATERIAL: NONE
 K PROTECTIVE CASING 4 FT.
 W/ LOCKING CAP
 L STICKUP 1.8 FT.

GEOLOGIC LOG

GROUND SURFACE ELEVATION _____



TIME OIL - PORTLAND

JOB NUMBER 821401 WELL/BORING NUMBER J3

DRAWN DinL APPROVED _____ DATE _____ ENGINEER/GEOLOGIST/HYDROLOGIST _____

DRILLING METHODS

Hollow Stem Auger /
Cable Tool /

DATE

1/5/89

TOP OF CASING ELEVATION

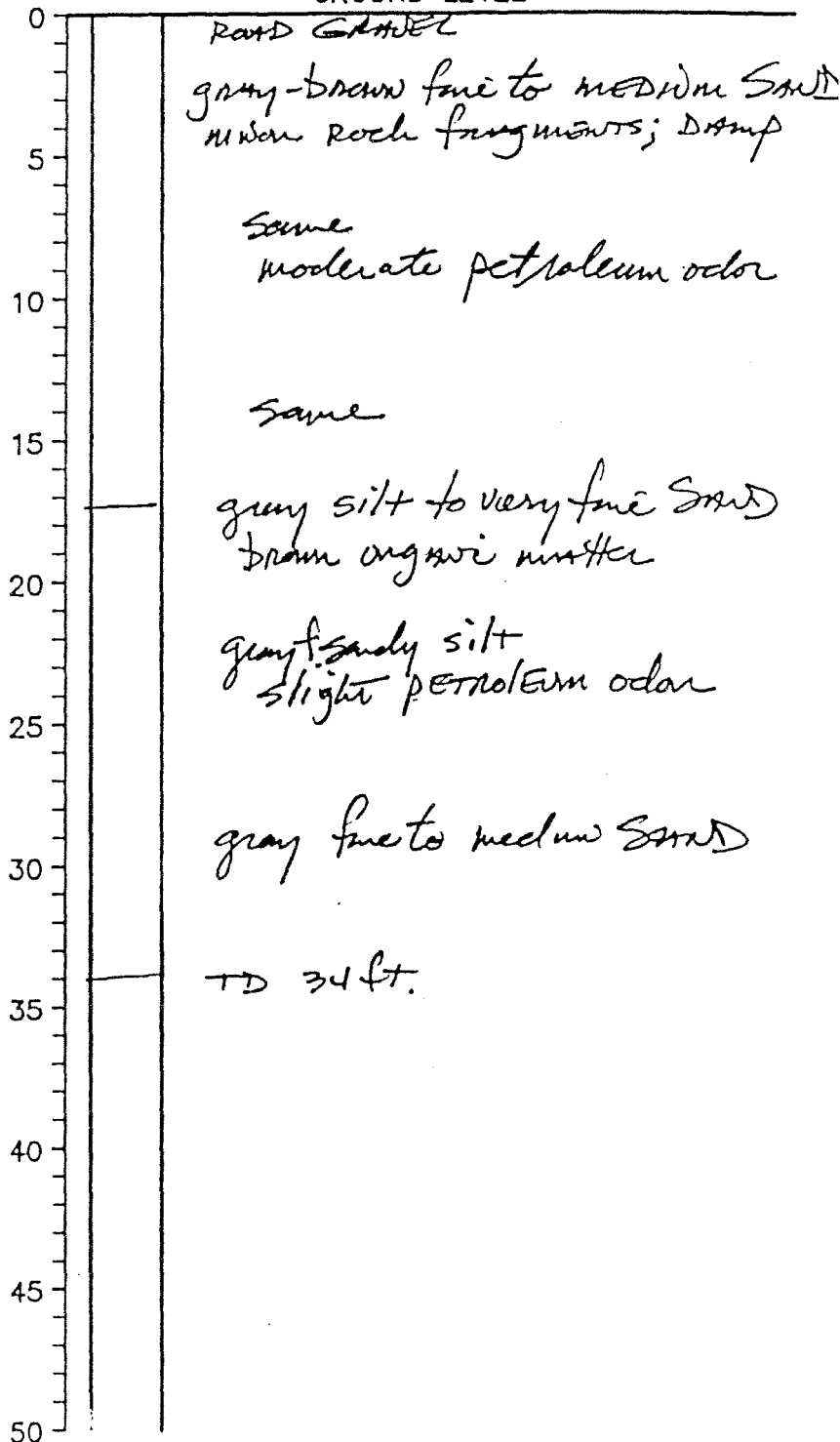
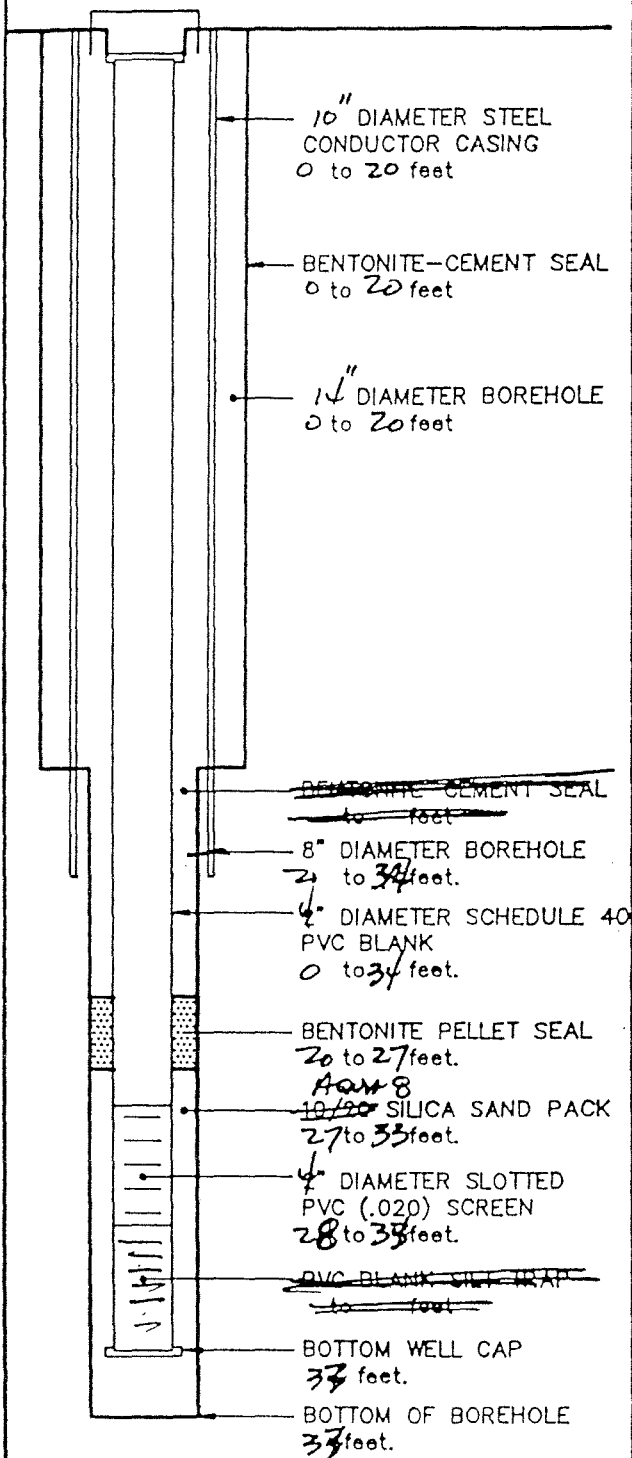
97.28

GROUND SURFACE ELEVATION

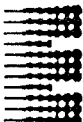
WELL COMPLETION DETAILS

LOG OF BORING

GROUND LEVEL



E C O V A



TIME oil / PORTLAND

BORING NUMBER

J3

DRAWN

JOB NUMBER

APPROVED

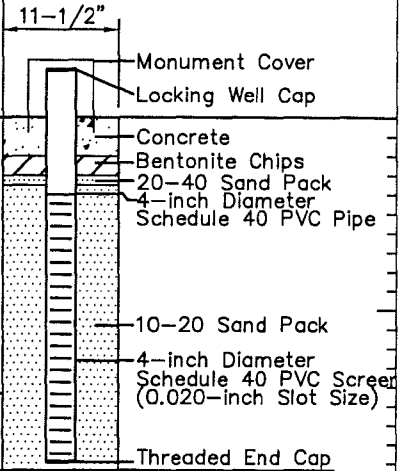
DATE

ENGINEER/GEOLOGIST/HYDROLOGIST

DM LANCE

Abandoned Well Logs

LW-2S

SAMPLE DATA					SOIL PROFILE		WELL DETAIL
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	
0	1	d		0.0		SP	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): 27.1 (MSL) Drilled by: Cascade Drilling
2	a2	a2	8	0.0			
3	a2	a2	17	0.0			
4	a2	a2	18	0.0			
5	a2	a2	23	33.9			
6	a2	a2	30	19.1			
7	a2	a2	12	18.3			
						ML	

Brown, fine to medium SAND (loose to medium dense, moist to wet) (fill to 11.0 ft)

ATD

@ 10 ft color becomes dark gray, faint hydrocarbon odor, slight sheen

moderate hydrocarbon odor, moderate sheen from 12.5 to 17.0 ft

Gray SILT with organics (stiff, wet) (moderate hydrocarbon odor, slight sheen)

Boring Completed 03/18/97
Total Boring Depth = 18.3 ft.

Well Completed 03/18/97
Elevation at Top of Well Casing = 30.1 ft.
Elevation at Top of PVC Casing = 29.56 ft.
Total Depth of Well = 17.5 ft BGS
Screened Interval = 4.5 to 17.5

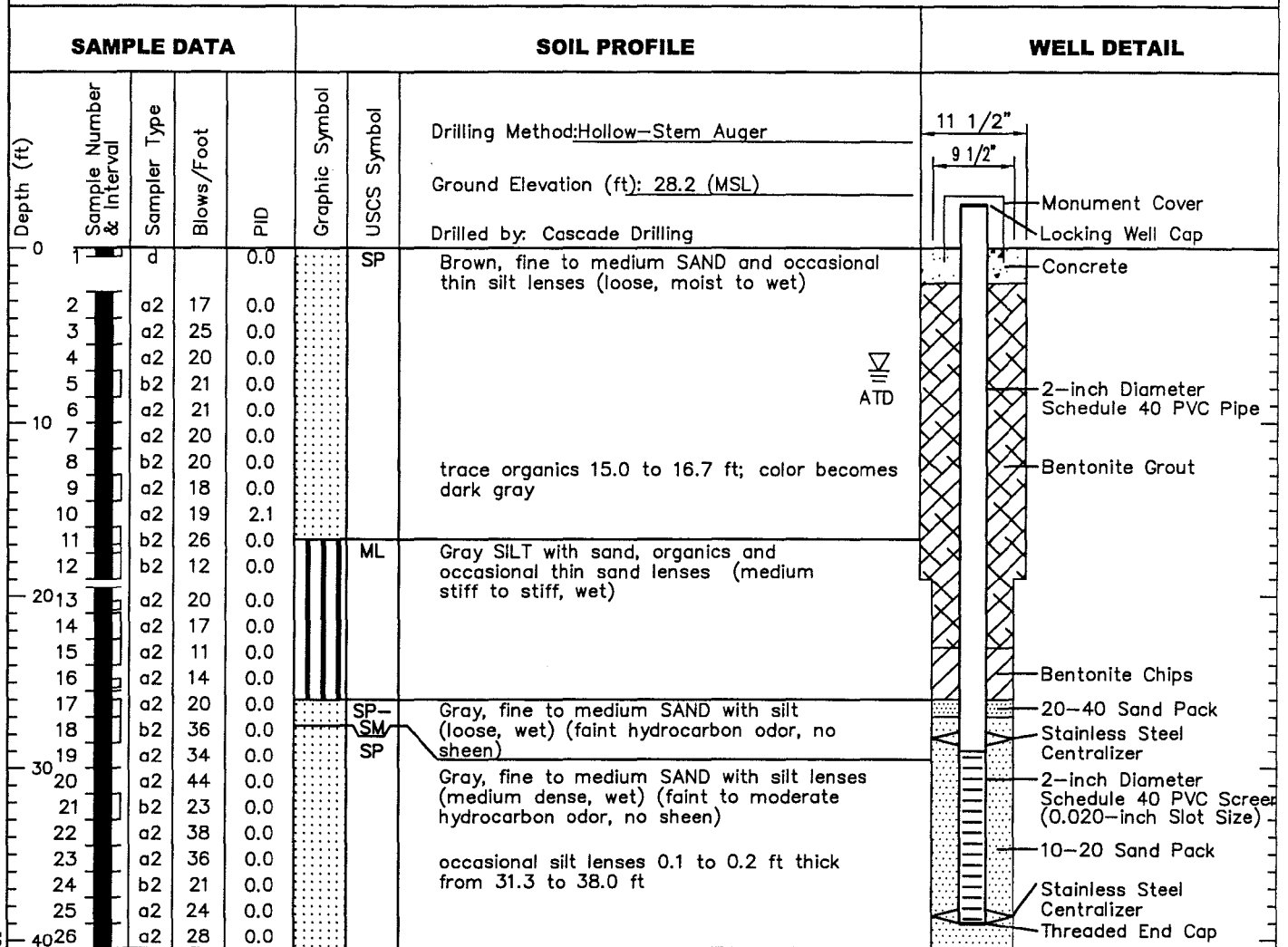
- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring and Monitoring Well LW-2S

Figure C-33

LW-4D



Boring Completed 03/12/97
Total Depth of Boring = 40.5 ft.

Well Completed 03/13/97
Elevation at Top of Well Casing = 30.8 ft.
Elevation at Top of PVC Casing = 30.17 ft.
Total Well Depth = 39.5 ft BGS
Screened Interval = 29 to 39 ft BGS

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring and Monitoring Well LW-4D

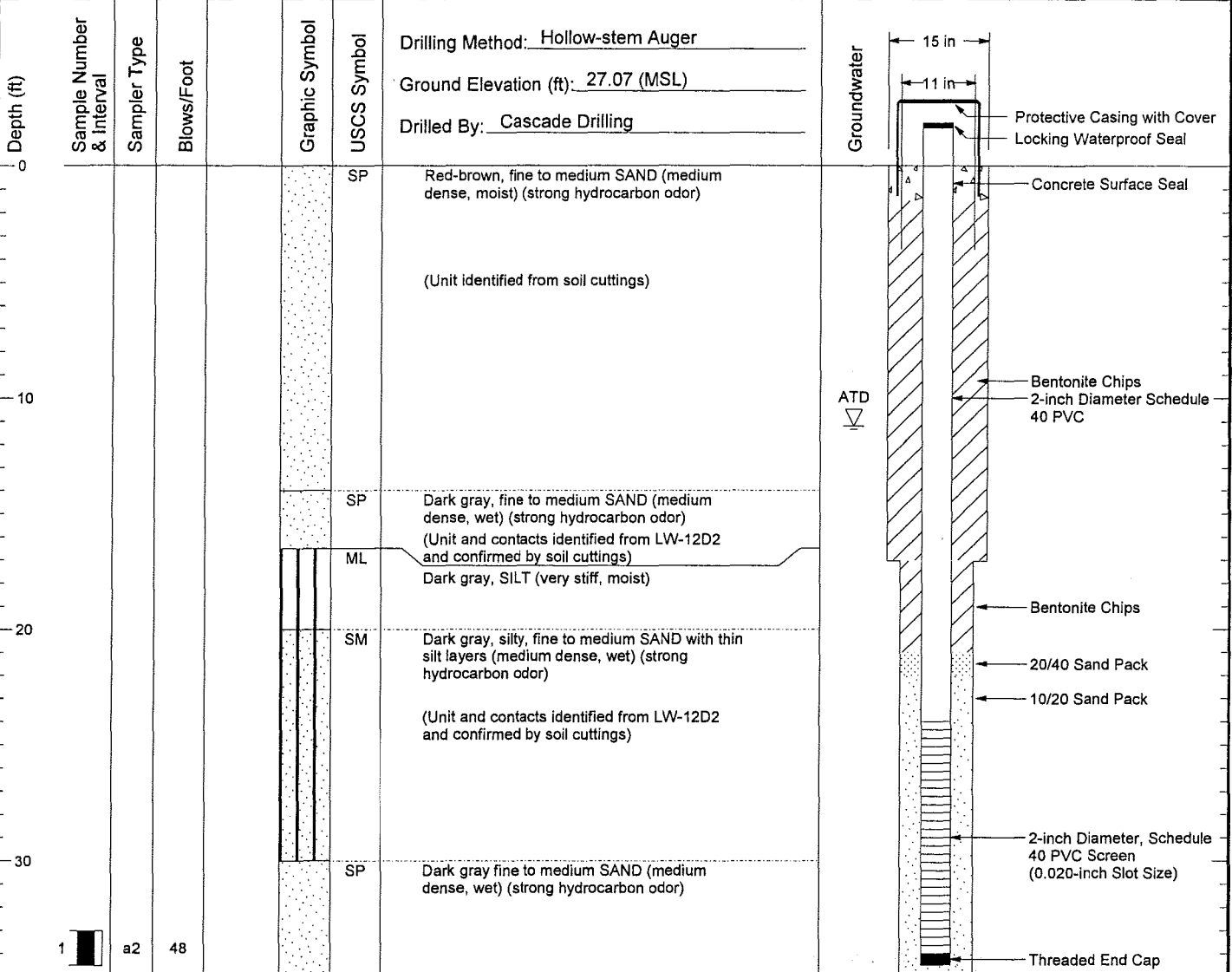
Figure C-36

LW-12D1

SAMPLE DATA

SOIL PROFILE

WELL DETAIL



Boring Completed 04/02/99
Total Depth of Boring = 35.0 ft.

Well Completed 04/02/99
Elevation at Top of Protective Casing = 30.40 ft.
Elevation at Top of Well Casing = 30.02 ft.
Total Depth of Well = 34.5 ft.
Screened Interval = 24 - 34 ft BGS.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings where soil samples were not collected and should be considered approximate (shown with dashes).



Log of Boring and Well LW-12D1

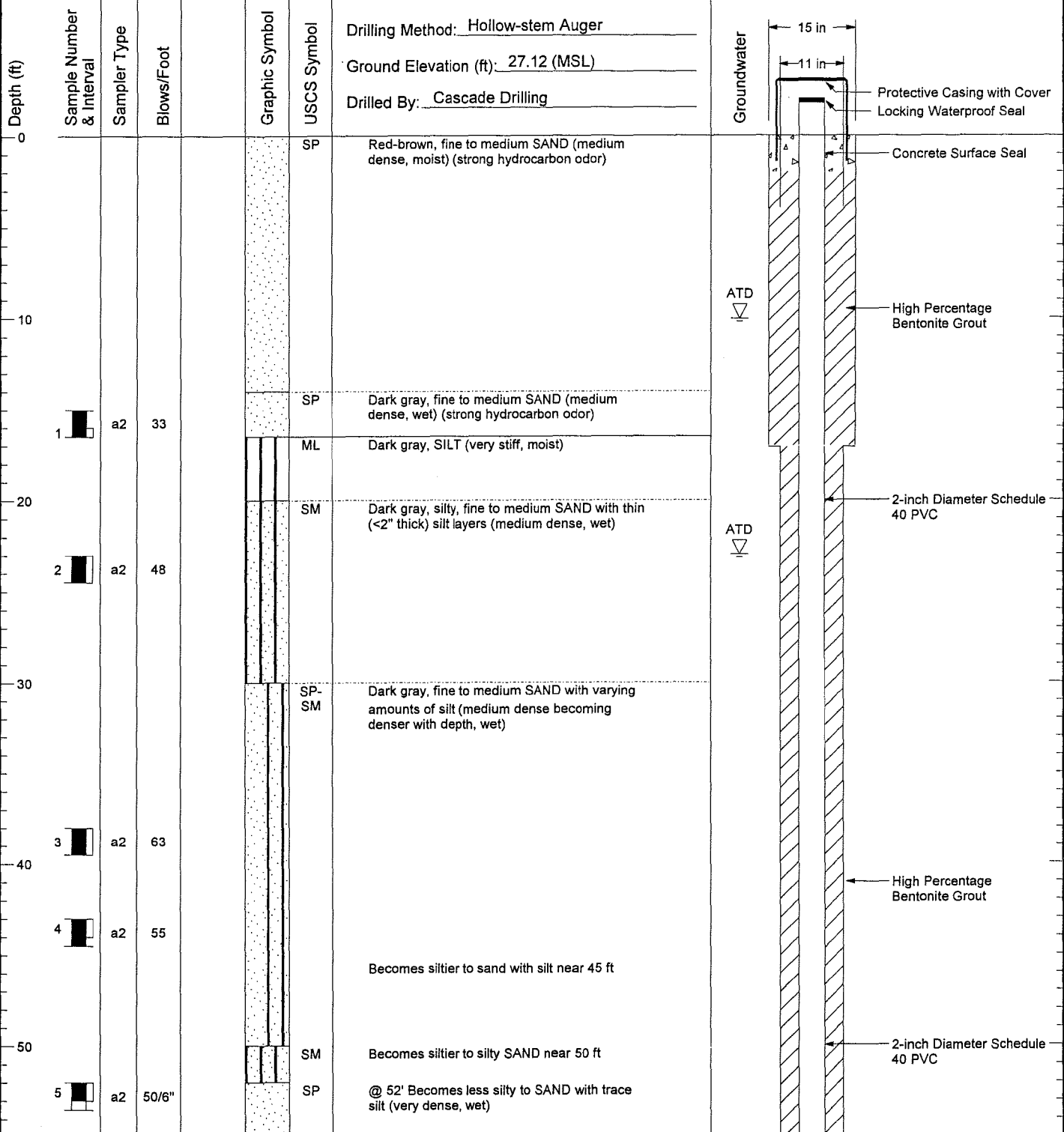
Figure C-47

LW-12D2

SAMPLE DATA

SOIL PROFILE

WELL DETAIL



- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings where soil samples were not collected and should be considered approximate (shown with dashes).



Log of Boring and Well LW-12D2

Figure C-48
(1 of 2)

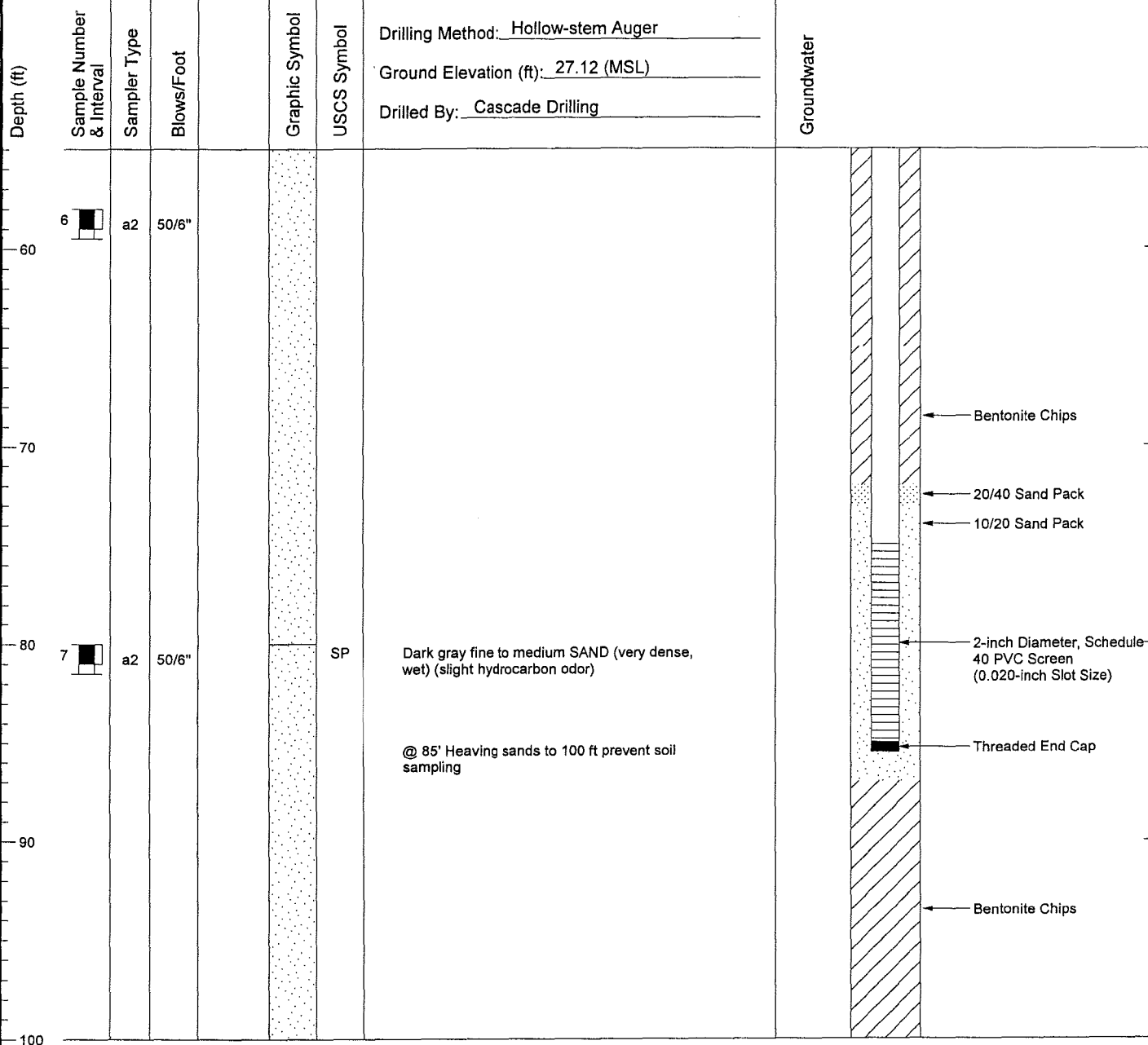
BZTO104(e)023337

LW-12D2

SAMPLE DATA

SOIL PROFILE

WELL DETAIL



Boring Completed 04/02/99
Total Depth of Boring = 100.0 ft.

Well Completed 04/02/99
Elevation at Top of Protective Casing = 29.88 ft.
Elevation at Top of Well Casing = 29.24 ft.
Total Depth of Well = 85.5 ft.
Screened Interval = 75 - 85 ft BGS.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings where soil samples were not collected and should be considered approximate (shown with dashes).



Log of Boring and Well LW-12D2

Figure C-48
(2 of 2)

LW-101S

SAMPLE DATA					SOIL PROFILE		WELL DETAIL	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol		
							Drilling Method: Hollow-Stem Auger	
							Ground Elevation (ft): 26.4 (MSL)	
							Drilled by: Cascade Drilling	
0	1	a				GP		
2	2	a2	18	0.0		GM/SP		
3	3	a2	18	0.0				
4	4	a2	19	0.0				
10	5	a2	9	0.0				
6	6	a2	16	0.0		ML		

Boring Completed 03/19/97
Total Depth of Boring = 13.0 ft.

Well Completed 03/19/97
Elevation at Top of Well Casing = 29.8 ft.
Elevation at Top of PVC Casing = 29.41 ft.
Total Depth of Well = 12.0 ft BGS
Screened Interval = 3.0 to 11.5 ft BGS

- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring and Monitoring Well LW-101S

Figure C-49

LW-102S

SAMPLE DATA					SOIL PROFILE		WELL DETAIL	
Depth (ft)	Sample Number & Interval	Sampler Type	Blows/Foot	PID	Graphic Symbol	USCS Symbol	Drilling Method: Hollow-Stem Auger Ground Elevation (ft): 26.1 (MSL) Drilled by: Cascade Drilling	
	1	d						
	2	a2	26	0.0				
	3	a2	32	0.0			11" Locking Waterproof Well Seal Concrete 10-20 Sand Bentonite Chips 20-40 Sand Pack 2-inch Diameter Schedule 40 PVC Pipe 10-20 Sand Pack 2-inch Diameter Schedule 40 PVC Screen (0.020-inch Slot Size) Threaded End Cap Bentonite Chips	
	4	a2	14	0.0				
	5	a2	7	0.0				
	6	a2	6	0.0				
							ASPHALT pavement (3 inch thick) Brown, sandy GRAVEL with silt (loose, moist) Brown, fine to medium SAND with occasional silt lenses 0.1 ft thick (loose to medium dense, moist to wet) @ 10 ft color becomes gray Gray SILT with organics (medium stiff, wet)	

Boring Completed 03/18/97
Total Depth of Boring = 14.0 ft.

Well Completed 03/18/97
Elevation at Top of Well Casing = 26.1 ft.
Elevation at Top of PVC Casing = 25.77 ft.
Total Depth of Well = 12.0 ft BGS
Screened Interval = 3.0 to 11.5 ft BGS

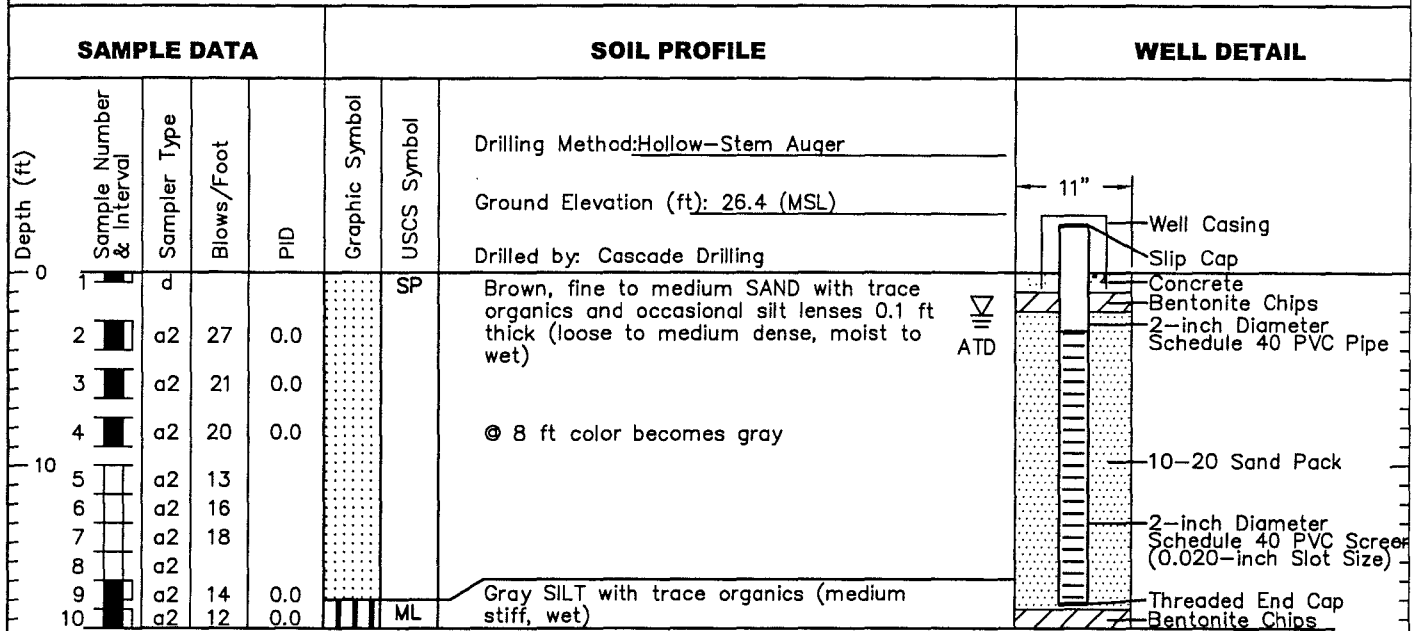
- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring and Monitoring Well LW-102S

Figure C-50

LW-103S



Boring Completed 03/19/97
Total Depth of Boring = 18.5 ft.

Well Completed 03/19/97
Elevation at Top of Well Casing = 29.6 ft.
Elevation at Top of PVC Casing = 29.07 ft.
Total Depth of Well = 17.5 ft BGS
Screened Interval = 3.0 to 17.2 ft BGS

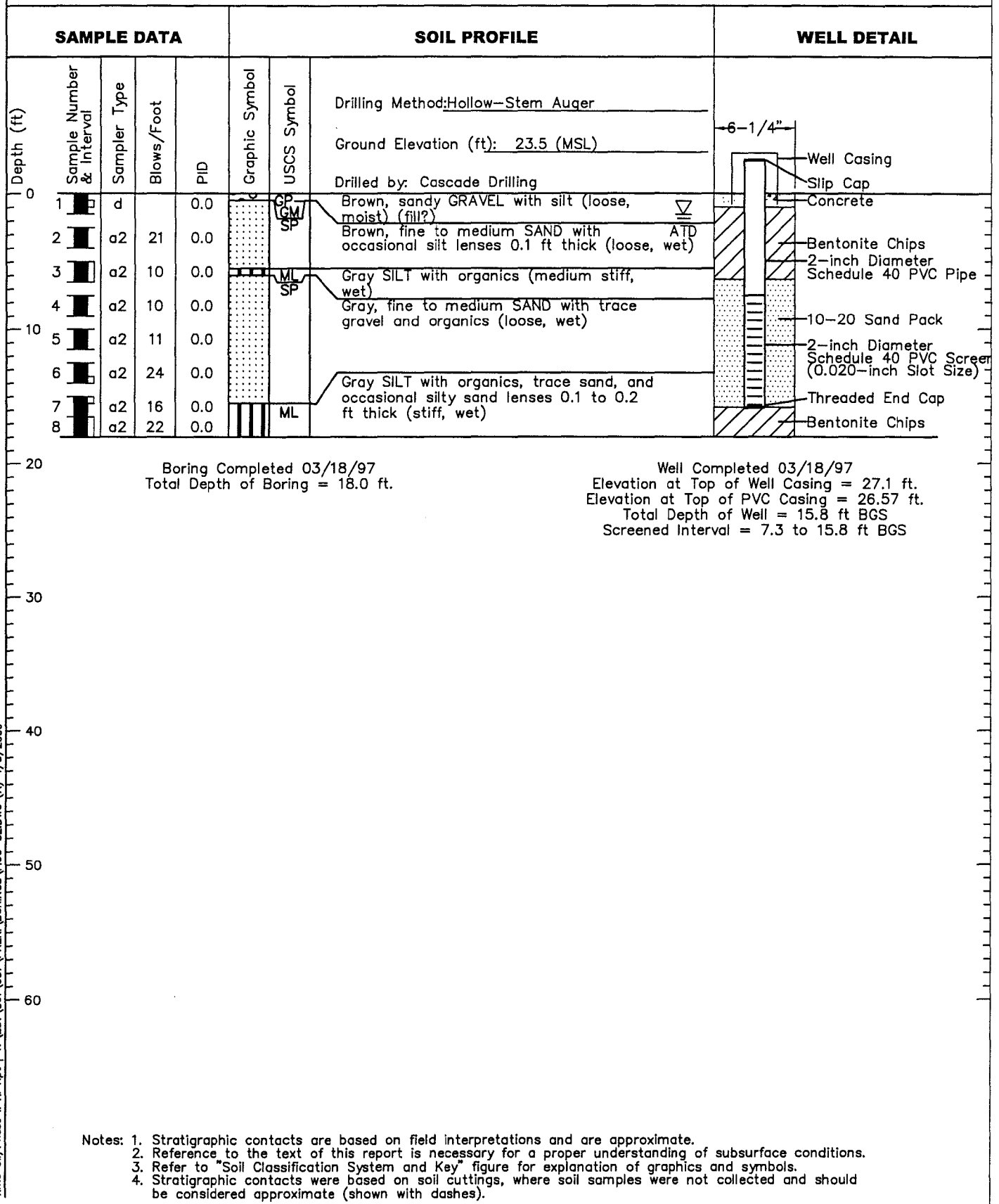
- Notes: 1. Stratigraphic contacts are based on field interpretations and are approximate.
2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
4. Stratigraphic contacts were based on soil cuttings, where soil samples were not collected and should be considered approximate (shown with dashes).



Boring and Monitoring Well LW-103S

Figure C-51

LW-104S



Boring and Monitoring Well LW-104S

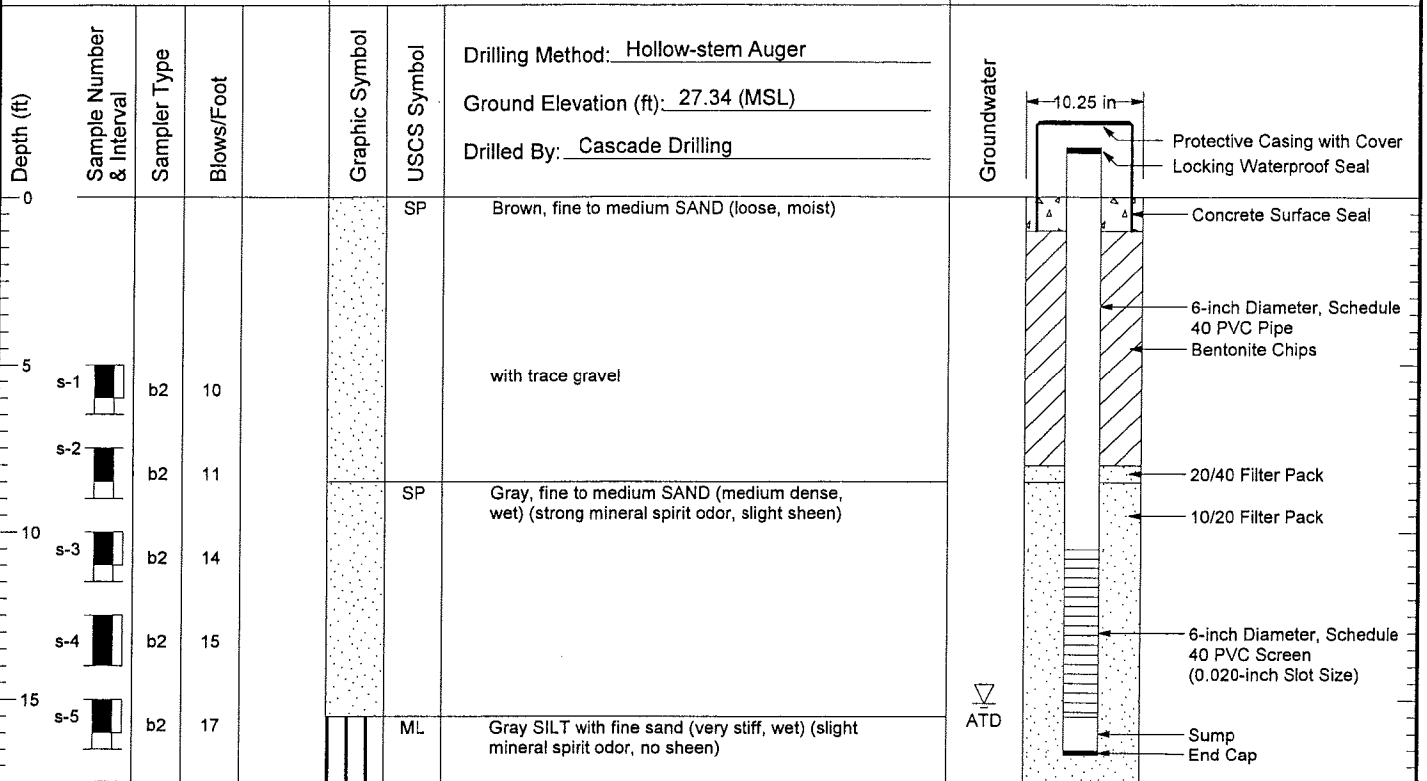
Figure C-52

RW-3

SAMPLE DATA

SOIL PROFILE

EXTRACTION WELL DETAIL



Boring Completed 11/22/99
Total Depth of Boring = 17.5 ft.

Extraction Well Completed 11/22/99
Elevation at Top of Protective Casing = 30.52 ft.
Elevation at Top of Extraction Well Casing = 29.96 ft.
Total Depth of Extraction Well = 16.7 ft.
Screened Interval = 10.5 - 15.5 ft BGS.

- Notes:
1. Stratigraphic contacts are based on field interpretations and are approximate.
 2. Reference to the text of this report is necessary for a proper understanding of subsurface conditions.
 3. Refer to "Soil Classification System and Key" figure for explanation of graphics and symbols.
 4. Stratigraphic contacts were based on soil cuttings where soil samples were not collected and should be considered approximate (shown with dashes).



Log of Boring and Extraction Well RW-3

Figure C-55

Water Level Measurements

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
Shallow Wells:							
B	03/25/1997	----	29.04	NM	----	NM	Couldn't remove cap
B	03/31/1997	----	29.04	NM	----	NM	Couldn't remove cap
B	07/16/1997	08:30	29.04	11.02	18.02	----	
B	10/21/1997	16:35	29.04	13.39	15.65	----	
B	01/27/1998	12:15	29.04	11.53	17.51	----	
B	05/18/1998	17:56	29.04	12.51	16.53	----	
B	08/17/1998	11:02	29.04	14.40	14.64	----	
B	11/13/1998	10:24	29.04	14.38	14.66	----	
B	02/16/1999	13:36	29.04	9.69	19.35	----	
B	05/18/1999	15:52	29.04	11.72	17.32	----	
B	09/21/1999	12:21	29.04	15.18	13.86	----	
B	12/06/1999	14:37	29.04	13.00	16.04	----	
B	02/16/2000	10:57	29.04	11.84	17.20	----	
B	05/23/2000	17:31	29.04	13.22	15.82	----	
B	08/29/2000	14:23	29.04	15.32	13.72	----	
B	11/09/2000	13:31	29.04	15.29	13.75	----	
B	02/12/2001	15:25	29.04	13.68	15.36	----	
B	06/04/2001	12:49	29.04	14.18	14.86	----	
B	08/16/2001	11:54	29.04	15.80	13.24	----	
B	11/28/2001	12:44	29.04	13.80	15.24	----	
B	02/27/2002	14:33	29.04	12.27	16.77	----	
B	06/27/2002	15:05	29.04	13.38	15.66	----	
B	08/26/2002	16:59	29.04	14.02	15.02	----	
B	11/13/2002	09:01	29.04	13.90	15.14	----	
B	02/11/2003	10:13	29.04	12.85	16.19	----	
B	05/08/2003	08:11	29.04	12.27	16.77	----	
B	08/27/2003	15:30	29.04	14.70	14.34	----	
B1	03/25/1997	10:48	29.74	----	----	----	Couldn't remove cap
B1	03/31/1997	----	29.74	----	----	----	Couldn't remove cap
B1	07/16/1997	07:49	29.74	11.01	18.73	----	
B1	10/21/1997	16:33	29.74	13.56	16.18	----	
B1	01/27/1998	12:10	29.74	11.68	18.06	----	
B1	05/18/1998	17:55	29.74	12.76	16.98	----	
B1	08/17/1998	11:04	29.74	14.15	15.59	----	
B1	11/13/1998	10:21	29.74	15.05	14.69	----	
B1	02/16/1999	13:33	29.74	9.59	20.15	----	
B1	05/18/1999	15:51	29.74	11.79	17.95	----	
B1	09/21/1999	12:19	29.74	14.63	15.11	----	
B1	12/06/1999	14:38	29.74	14.25	15.49	----	
B1	02/16/2000	10:55	29.74	12.20	17.54	----	
B1	05/23/2000	17:32	29.74	13.25	16.49	----	
B1	08/29/2000	14:22	29.74	14.93	14.81	----	
B1	11/09/2000	13:30	29.74	15.56	14.18	----	
B1	02/12/2001	15:26	29.74	15.19	14.55	----	
B1	06/04/2001	12:50	29.74	15.06	14.68	----	
B1	08/16/2001	11:55	29.74	15.72	14.02	----	
B1	11/28/2001	12:45	29.74	15.47	14.27	----	
B1	02/27/2002	14:34	29.74	12.15	17.59	----	
B1	03/05/2002	11:06	29.74	12.28	17.46	----	
B1	04/05/2002	08:42	29.74	12.40	17.34	----	
B1	05/29/2002	00:00	29.74	13.20	16.54	----	
B1	06/27/2002	15:06	29.74	13.77	15.97	----	
B1	08/26/2002	17:00	29.74	14.79	14.95	----	
B1	11/13/2002	09:02	29.74	16.00	13.74	----	
B1	02/11/2003	10:15	29.74	12.86	16.88	----	
B1	05/08/2003	08:12	29.74	12.25	17.49	----	
B1	08/27/2003	15:31	29.74	14.79	14.95	----	
B1	10/23/2003	14:07	29.74	15.61	14.13	----	
B1	02/19/2004	14:13	29.74	12.39	17.35	----	
B1	06/09/2004	09:01	29.74	14.10	15.64	----	
B1	08/10/2004	12:21	29.74	15.18	14.56	----	
B1	11/18/2004	09:04	29.74	15.70	14.04	----	
C	03/25/1997	12:32	28.89	5.56	23.33	----	
C	03/31/1997	11:38	28.89	6.16	22.73	----	
C	07/16/1997	08:47	28.89	8.28	20.61	----	
C	10/21/1997	15:15	28.89	10.00	18.89	----	
C	01/27/1998	13:41	28.89	7.98	20.91	----	
C	05/18/1998	18:08	28.89	9.54	19.35	----	
C	08/17/1998	11:11	28.89	dry	----	----	
C	11/13/1998	10:36	28.89	10.36	18.53	----	
C	02/16/1999	13:58	28.89	5.91	22.98	----	
C	05/18/1999	16:04	28.89	7.90	20.99	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
C	09/21/1999	12:44	28.89	dry	----	----	
C	12/06/1999	14:50	28.89	9.82	----	----	Water in endcap
C	02/16/2000	09:51	28.89	8.78	20.11	----	
C	05/23/2000	17:55	28.89	dry	----	----	
C	08/29/2000	14:33	28.89	dry	----	----	
C	11/09/2000	13:47	28.89	9.94	18.95	----	Dry?
C	02/12/2001	15:08	28.89	dry	----	----	
C	06/04/2001	13:25	28.89	dry	----	----	
C	08/16/2001	12:11	28.89	dry	----	----	
C	11/28/2001	13:03	28.89	dry	----	----	
C	02/27/2002	14:44	28.89	8.94	19.95	----	
C	06/27/2002	15:36	28.89	dry	----	----	
C	08/26/2002	17:31	28.89	dry	----	----	
C	11/13/2002	09:25	28.89	dry	----	----	
C	02/11/2003	10:46	28.89	dry	----	----	1" water
C	05/08/2003	08:35	28.89	8.53	20.36	----	
C	08/27/2003	15:08	28.89	dry	----	----	
D	03/25/1997	12:25	30.04	8.32	21.72	----	
D	03/31/1997	11:31	30.04	8.66	21.38	----	
D	07/16/1997	08:35	30.04	10.45	19.59	----	
D	10/21/1997	17:10	30.04	13.27	16.77	----	
D	01/27/1998	13:31	30.04	10.72	19.32	----	
D	05/18/1998	17:36	30.04	12.23	17.81	----	
D	08/17/1998	10:57	30.04	13.83	16.21	----	
D	11/13/1998	09:05	30.04	15.01	15.03	----	
D	02/16/1999	13:45	30.04	8.50	21.54	----	
D	05/18/1999	15:59	30.04	11.00	19.04	----	
D	09/21/1999	12:37	30.04	14.41	15.63	----	
D	12/06/1999	14:46	30.04	14.04	16.00	----	
D	02/16/2000	09:55	30.04	11.50	18.54	----	
D	05/23/2000	12:56	30.04	12.74	17.30	----	
D	08/29/2000	14:35	30.04	14.70	15.34	----	
D	11/09/2000	13:43	30.04	15.49	14.55	----	
D	02/12/2001	15:12	30.04	14.99	15.05	----	
D	06/04/2001	12:35	30.04	14.95	15.09	----	
D	08/16/2001	11:46	30.04	15.64	14.40	----	
D	11/28/2001	12:43	30.04	15.45	14.59	----	
D	02/27/2002	14:21	30.04	11.37	18.67	----	
D	03/05/2002	11:00	30.04	11.51	18.53	----	
D	04/05/2002	08:45	30.04	11.65	18.39	----	
D	05/29/2002	00:00	30.04	12.73	17.31	----	
D	06/27/2002	15:00	30.04	13.43	16.61	----	
D	08/26/2002	17:04	30.04	14.68	15.36	----	
D	11/13/2002	09:19	30.04	15.96	14.08	----	
D	02/11/2003	10:41	30.04	12.10	17.94	----	
D	05/08/2003	08:30	30.04	11.48	18.56	----	
D	08/27/2003	15:03	30.04	14.60	15.44	----	
D	10/23/2003	13:50	30.04	15.54	14.50	----	
D	02/19/2004	14:22	30.04	11.83	18.21	----	
D	06/09/2004	09:28	30.04	13.78	16.26	----	
D	08/10/2004	12:13	30.04	15.02	15.02	----	
D	11/18/2004	09:30	30.04	15.69	14.35	----	
F	08/18/1998	08:10	NA	14.77	NA		Abandoned August 2003
F							
G	03/25/1997	11:57	30.24	14.49	15.75	----	
G	03/31/1997	09:13	30.24	14.01	16.23	----	
G	07/16/1997	07:37	30.24	14.30	15.94	----	
G	10/21/1997	16:20	30.24	dry	----	----	
G	01/27/1998	11:49	30.24	dry	----	----	
G	05/18/1998	17:30	30.24	dry	----	----	
G	08/17/1998	11:06	30.24	dry	----	----	
G	11/13/1998	09:53	30.24	dry	----	----	
G	02/16/1999	13:14	30.24	dry	----	----	
G	05/18/1999	14:50	30.24	dry	----	----	
G	09/21/1999	11:30	30.24	dry	----	----	
G	12/06/1999	14:07	30.24	dry	----	----	
G	02/16/2000	10:19	30.24	dry	----	----	
G	05/23/2000	16:33	30.24	dry	----	----	
G	08/29/2000	13:18	30.24	dry	----	----	
G	11/09/2000	12:30	30.24	dry	----	----	
G	02/12/2001	16:02	30.24	dry	----	----	
G	06/04/2001	11:41	30.24	dry	----	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
G	08/16/2001	10:50	30.24	dry	----	----	
G	11/28/2001	11:33	30.24	dry	----	----	
G	02/27/2002	13:38	30.24	dry	----	----	
G	06/27/2002	14:13	30.24	dry	----	----	
G	08/26/2002	16:05	30.24	dry	----	----	
G	11/13/2002	07:37	30.24	dry	----	----	
G	02/11/2003	08:58	30.24	dry	----	----	
G	05/08/2003	06:57	30.24	dry	----	----	
G	08/27/2003	13:38	30.24	dry	----	----	
G	10/23/2003	12:38	30.24	dry	----	----	
G	02/19/2004	12:58	30.24	dry	----	----	
G	06/09/2004	07:54	30.24	dry	----	----	
G	08/10/2004	12:01	30.24	dry	----	----	
G	11/18/2004	09:16	30.24	dry	----	----	
H	03/31/1997	11:51	27.08	5.42	21.66	----	
H	07/16/1997	08:44	27.08	7.29	19.79	----	
H	10/21/1997	17:45	27.08	10.08	17.00	----	
H	01/27/1998	13:45	27.08	7.56	19.52	----	
H	05/18/1998	17:50	27.08	9.06	18.02	----	
H	08/17/1998	09:15	27.08	10.68	16.40	----	
H	11/13/1998	10:54	27.08	11.84	15.24	----	
H	02/16/1999	13:50	27.08	5.35	21.73	----	
H	05/18/1999	15:41	27.08	7.78	19.30	----	
H	09/21/1999	12:15	27.08	11.23	15.85	----	
H	12/06/1999	15:13	27.08	10.91	16.17	----	
H	02/16/2000	10:52	27.08	8.28	18.80	----	
H	05/23/2000	17:20	27.08	9.48	17.60	----	
H	08/29/2000	14:06	27.08	11.55	15.53	----	
H	11/09/2000	13:23	27.08	12.34	14.74	----	
H	02/12/2001	15:36	27.08	11.88	15.20	----	
H	06/04/2001	12:27	27.08	11.81	15.27	----	
H	08/16/2001	11:41	27.08	12.57	14.51	----	
H	11/28/2001	12:34	27.08	12.39	14.69	----	
H	02/27/2002	14:18	27.08	8.14	18.94	----	
H	03/05/2002	10:58	27.08	8.28	18.80	----	
H	04/05/2002	09:10	27.08	8.45	18.63	----	
H	05/29/2002	00:00	27.08	9.38	17.70	----	
H	06/27/2002	14:51	27.08	10.25	16.83	----	
H	08/26/2002	17:00	27.08	11.54	15.54	----	
H	11/13/2002	09:12	27.08	12.83	14.25	----	
H	02/11/2003	10:33	27.08	8.96	18.12	----	
H	05/08/2003	08:24	27.08	8.24	18.84	----	
H	08/27/2003	15:02	27.08	11.48	15.60	----	
H	10/23/2003	13:42	27.08	12.41	14.67	----	
H	02/19/2004	14:35	27.08	9.71	17.37	----	
H	06/09/2004	09:16	27.08	10.61	16.47	----	
H	08/10/2004	11:33	27.08	11.93	15.15	----	
H	11/18/2004	09:36	27.08	12.54	14.54	----	
J1	03/25/1997	12:15	29.70	8.78	20.92	----	Orange/brown algae
J1	03/31/1997	11:19	29.70	9.02	20.68	----	
J1	07/16/1997	08:22	29.70	10.49	19.21	----	
J1	10/21/1997	16:58	29.70	13.10	16.60	----	
J1	01/27/1998	13:15	29.70	11.03	18.67	----	
J1	05/18/1998	18:01	29.70	12.27	17.43	----	
J1	08/17/1998	11:00	29.70	13.78	15.92	----	
J1	11/13/1998	10:30	29.70	14.77	14.93	----	
J1	02/16/1999	13:37	29.70	8.91	20.79	----	
J1	05/18/1999	15:46	29.70	11.19	18.51	----	
J1	09/21/1999	12:28	29.70	14.36	15.34	----	
J1	12/06/1999	15:07	29.70	13.95	15.75	----	
J1	02/16/2000	11:05	29.70	11.67	18.03	----	
J1	05/23/2000	17:27	29.70	12.78	16.92	----	
J1	08/29/2000	14:14	29.70	14.58	15.12	----	
J1	11/09/2000	13:25	29.70	15.30	14.40	----	
J1	02/12/2001	15:22	29.70	14.87	14.83	----	
J1	06/04/2001	12:39	29.70	14.83	14.87	----	
J1	08/16/2001	11:52	29.70	15.48	14.22	----	
J1	11/28/2001	12:35	29.70	15.23	14.47	----	
J1	02/27/2002	14:30	29.70	11.62	18.08	----	
J1	03/05/2002	11:04	29.70	11.76	17.94	----	
J1	04/05/2002	08:40	29.70	11.87	17.83	----	
J1	05/29/2002	00:00	29.70	12.77	16.93	----	
J1	06/27/2002	15:02	29.70	13.40	16.30	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
J1	08/26/2002	16:54	29.70	14.51	15.19	----	
J1	11/13/2002	09:00	29.70	15.71	13.99	----	
J1	02/11/2003	10:18	29.70	12.33	17.37	----	
J1	05/08/2003	08:14	29.70	11.65	18.05	----	
J1	08/27/2003	14:47	29.70	14.46	15.24	----	
J1	10/23/2003	13:52	29.70	15.31	14.39	----	
J1	02/19/2004	14:18	29.70	11.88	17.82	----	
J1	06/09/2004	09:08	29.70	13.71	15.99	----	
J1	08/10/2004	12:20	29.70	14.86	14.84	----	On 8/03, DTW was 14.75; 8/10/04 reading changed from 15.86 to 1
J1	11/18/2004	09:03	29.70	15.45	14.25	----	
K	03/25/1997	12:08	29.42	8.20	21.22	----	
K	03/31/1997	09:32	29.42	8.46	20.96	----	
K	07/16/1997	08:00	29.42	10.03	19.39	----	
K	10/21/1997	16:45	29.42	12.71	16.71	----	
K	01/27/1998	12:37	29.42	10.46	18.96	----	
K	05/18/1998	17:52	29.42	11.77	17.65	----	
K	08/17/1998	10:50	29.42	13.34	16.08	----	
K	11/13/1998	10:14	29.42	14.30	15.12	----	
K	02/16/1999	13:55	29.42	8.41	21.01	----	
K	05/18/1999	15:30	29.42	10.68	18.74	----	
K	09/21/1999	12:08	29.42	13.91	15.51	----	
K	12/06/1999	14:32	29.42	13.44	15.98	----	
K	02/16/2000	10:48	29.42	11.15	18.27	----	
K	05/23/2000	17:12	29.42	12.25	17.17	----	
K	08/29/2000	13:56	29.42	14.16	15.26	----	
K	11/09/2000	13:16	29.42	14.84	14.58	----	
K	02/12/2001	15:41	29.42	14.35	15.07	----	
K	06/04/2001	12:20	29.42	14.22	15.20	----	
K	08/16/2001	11:35	29.42	15.12	14.30	----	
K	11/28/2001	12:26	29.42	14.68	14.74	----	
K	02/27/2002	14:17	29.42	11.05	18.37	----	
K	03/05/2002	10:55	29.42	11.25	18.17	----	
K	04/05/2002	08:55	29.42	11.30	18.12	----	
K	05/29/2002	00:00	29.42	12.22	17.20	----	
K	06/27/2002	14:47	29.42	12.92	16.50	----	
K	08/26/2002	17:17	29.42	14.12	15.30	----	
K	11/13/2002	09:11	29.42	15.18	14.24	----	
K	02/11/2003	10:29	29.42	11.80	17.62	----	
K	05/08/2003	08:21	29.42	11.14	18.28	----	
K	08/27/2003	14:52	29.42	14.08	15.34	----	
K	10/23/2003	13:40	29.42	14.91	14.51	----	
K	02/19/2004	14:39	29.42	11.41	18.01	----	
K	06/09/2004	09:23	29.42	13.26	16.16	----	
K	08/10/2004	11:28	29.42	14.35	15.07	----	
K	11/18/2004	09:31	29.42	15.01	14.41	----	
L	03/25/1997	12:35	28.10	4.98	23.12	----	
L	03/31/1997	11:40	28.10	5.24	22.86	----	
L	07/16/1997	08:49	28.10	7.50	20.60	----	
L	10/21/1997	15:18	28.10	9.55	18.55	----	
L	01/27/1998	13:39	28.10	6.45	21.65	----	
L	05/18/1998	18:07	28.10	9.21	18.89	----	
L	08/17/1998	11:10	28.10	11.59	16.51	----	
L	11/13/1998	10:35	28.10	13.02	15.08	----	
L	02/16/1999	13:57	28.10	4.78	23.32	----	
L	05/18/1999	16:03	28.10	7.62	20.48	----	
L	09/21/1999	12:43	28.10	12.30	15.80	----	
L	12/06/1999	14:49	28.10	9.51	18.59	----	
L	02/16/2000	09:49	28.10	7.13	20.97	----	
L	05/23/2000	17:54	28.10	9.11	18.99	----	
L	08/29/2000	14:32	28.10	12.66	15.44	----	
L	11/09/2000	13:46	28.10	13.56	14.54	----	
L	02/12/2001	15:07	28.10	13.04	15.06	----	
L	06/04/2001	13:24	28.10	12.78	15.32	----	
L	08/16/2001	12:10	28.10	13.66	14.44	----	
L	11/28/2001	13:02	28.10	12.34	15.76	----	
L	02/27/2002	14:42	28.10	7.16	20.94	----	
L	03/05/2002	11:12	28.10	7.39	20.71	----	
L	04/05/2002	08:39	28.10	7.63	20.47	----	
L	05/29/2002	00:00	28.10	9.09	19.01	----	
L	06/27/2002	10:38	28.10	10.11	17.99	----	
L	08/26/2002	17:30	28.10	12.56	15.54	----	
L	11/13/2002	09:26	28.10	14.00	14.10	----	
L	02/11/2003	10:47	28.10	7.17	20.93	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
L	05/08/2003	08:34	28.10	7.01	21.09	----	
L	08/27/2003	15:09	28.10	15.20	12.90	----	
L	10/23/2003	14:20	28.10	13.56	14.54	----	
L	02/19/2004	13:57	28.10	6.84	21.26	----	
L	06/09/2004	09:35	28.10	11.10	17.00	----	
L	08/10/2004	12:27	28.10	13.00	15.10	----	
L	11/18/2004	09:42	28.10	13.77	14.33	----	
N	03/25/1997	11:48	31.40	14.05	17.35	----	
N	03/31/1997	08:59	31.40	14.26	17.14	----	Hydrocarbon odor, product
N	07/16/1997	07:20	31.40	16.03	16.33	1.20	Light brown color; thick coating on probe
N	10/21/1997	16:09	31.40	16.46	14.94	----	No product - strong petroleum odor
N	10/23/1997	17:20	31.40	16.48	14.92	----	No product - strong petroleum odor
N	01/27/1998	11:13	31.40	15.01	16.41	0.02	
N	05/18/1998	17:20	31.40	16.39	15.06	0.06	
N	08/17/1998	10:40	31.40	17.16	14.26	0.02	Thin coat of thick product
N	11/13/1998	09:48	31.40	17.83	13.58	0.01	
N	02/16/1999	12:55	31.40	14.09	17.53	0.27	Strong petroleum odor
N	05/18/1999	14:47	31.40	15.79	15.64	0.04	
N	09/21/1999	11:23	31.40	17.39	14.02	0.01	
N	12/06/1999	14:00	31.40	16.57	14.83	----	
N	02/16/2000	10:10	31.40	15.69	15.71	----	
N	05/23/2000	16:24	31.40	16.42	14.98	----	Strong petroleum odor, no product
N	08/29/2000	13:07	31.40	17.61	13.79	----	
N	11/09/2000	12:26	31.40	18.23	13.19	0.03	
N	02/12/2001	15:49	31.40	17.64	13.76	----	
N	06/04/2001	11:31	31.40	17.58	13.82	----	
N	08/16/2001	10:29	31.40	18.08	13.32	----	Trace product
N	11/28/2001	11:27	31.40	18.06	13.34	----	Trace product
N	02/27/2002	13:25	31.40	15.76	15.64	----	
N	04/05/2002	08:09	31.40	15.88	15.52	----	
N	05/29/2002	00:00	31.40	16.42	14.98	----	
N	06/27/2002	14:12	31.40	16.80	14.60	----	
N	08/26/2002	15:56	31.40	17.51	13.89	----	
N	11/13/2002	07:27	31.40	18.44	12.98	0.03	Product present
N	02/11/2003	08:49	31.40	15.33	16.07	----	
N	05/08/2003	06:51	31.40	15.71	15.69	----	
N	08/27/2003	13:33	31.40	17.54	13.86	----	
N	10/23/2003	12:08	31.40	18.18	13.22	----	
N	02/19/2004	12:21	31.40	15.79	15.61	----	
N	06/09/2004	07:36	31.40	17.04	14.36	----	
N	08/10/2004	10:55	31.40	17.72	13.68	----	
N	11/18/2004	08:38	31.40	dry	----	----	
P	03/25/1997	11:45	29.96	12.88	17.08	----	
P	03/31/1997	08:55	29.96	12.94	17.02	----	Hydrocarbon odor, product
P	07/16/1997	07:15	29.96	14.02	16.08	0.17	Light coating on probe; light brown color
P	10/21/1997	16:05	29.96	15.23	14.73	----	No product - strong petroleum odor
P	10/23/1997	17:25	29.96	15.21	14.75	----	No product - strong petroleum odor
P	01/27/1998	11:09	29.96	13.87	16.09	----	
P	05/18/1998	17:18	29.96	13.08	16.88	----	Trace of product on probe
P	08/17/1998	10:37	29.96	15.82	14.15	0.01	Sheen on probe, strong petroleum odor
P	11/13/1998	09:46	29.96	16.63	13.37	0.05	Strong gasoline odor
P	02/16/1999	12:52	29.96	12.91	17.10	0.06	Strong petroleum odor
P	05/18/1999	14:43	29.96	14.68	15.38	0.13	
P	09/21/1999	11:20	29.96	16.08	13.89	0.01	
P	12/06/1999	13:55	29.96	15.41	14.55	----	
P	02/16/2000	10:08	29.96	14.51	15.45	----	
P	05/23/2000	16:21	29.96	15.15	14.81	----	Trace of product on surface
P	08/29/2000	13:04	29.96	16.26	13.71	0.01	
P	11/09/2000	12:24	29.96	16.98	13.00	0.03	
P	02/12/2001	15:46	29.96	16.31	13.65	----	
P	06/04/2001	11:27	29.96	16.26	13.70	----	Trace product
P	08/16/2001	10:28	29.96	16.75	13.21	----	
P	11/28/2001	11:24	29.96	17.01	12.95	----	
P	02/27/2002	13:22	29.96	14.60	15.44	0.10	Strong ethanol-like odor
P	04/05/2002	08:07	29.96	14.70	15.34	0.10	
P	05/29/2002	00:00	29.96	15.00	14.96	----	Trace product
P	06/27/2002	14:11	29.96	15.49	14.47	----	
P	08/26/2002	15:54	29.96	16.15	13.81	----	
P	11/13/2002	07:25	29.96	16.99	13.00	0.04	Product present
P	02/11/2003	08:44	29.96	14.13	15.84	0.01	Product present
P	05/08/2003	06:47	29.96	15.53	14.44	0.01	Product barely present
P	08/27/2003	13:30	29.96	16.19	13.77	----	
P	10/23/2003	12:05	29.96	16.60	13.38	0.02	Trace product

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
P	02/19/2004	12:19	29.96	14.56	15.40	----	
P	06/09/2004	07:35	29.98	15.70	14.28	----	New reference elevation July 2004
P	08/10/2004	10:53	29.98	16.40	13.58	----	
P	11/18/2004	08:37	29.98	dry	----	----	
Q	03/25/1997	11:42	30.36	13.55	16.81	----	
Q	03/31/1997	08:52	30.36	13.54	16.82	----	Hydrocarbon odor
Q	07/16/1997	07:10	30.36	14.55	15.83	0.02	Light coating on probe; light brown color
Q	10/21/1997	16:04	30.36	15.70	14.66	----	No product - strong petroleum odor
Q	10/23/1997	17:29	30.36	15.69	14.67	----	No product - strong petroleum odor
Q	01/27/1998	11:05	30.36	14.48	15.88	----	
Q	05/18/1998	17:16	30.36	15.58	14.78	----	
Q	08/17/1998	10:35	30.36	16.27	14.09	----	Slight sheen on probe; no product, strong petroleum odor
Q	11/13/1998	09:44	30.36	17.01	13.36	0.01	Strong gasoline odor
Q	02/16/1999	12:49	30.36	13.61	16.76	0.01	Strong petroleum odor
Q	05/18/1999	14:40	30.36	15.13	15.23	----	Strong odor when cap removed
Q	09/21/1999	11:17	30.36	16.51	13.85	----	
Q	12/06/1999	13:53	30.36	15.88	14.48	----	
Q	02/16/2000	10:06	30.36	15.02	15.34	----	Film of product
Q	05/23/2000	16:19	30.36	15.64	14.72	----	Strong petroleum odor, no product
Q	08/29/2000	13:01	30.36	16.69	13.67	----	
Q	11/09/2000	12:23	30.36	17.50	12.86	----	Trace of product
Q	02/12/2001	15:45	30.36	16.71	13.65	----	
Q	06/04/2001	11:25	30.36	16.66	13.70	----	
Q	08/16/2001	10:26	30.36	17.15	13.21	----	Trace product
Q	11/28/2001	11:21	30.36	17.76	12.94	0.42	
Q	02/27/2002	13:20	30.36	15.07	15.29	----	Strong petroleum odor, no product
Q	04/05/2002	08:05	30.36	15.23	15.13	----	Trace product
Q	05/29/2002	00:00	30.36	15.53	14.83	----	Trace product
Q	06/27/2002	14:10	30.36	15.95	14.41	----	Trace product
Q	08/26/2002	15:52	30.36	16.60	13.76	----	
Q	11/13/2002	07:30	30.36	17.50	12.87	0.01	Product present
Q	02/11/2003	08:47	30.36	14.67	15.69	----	
Q	05/08/2003	06:48	30.36	15.00	15.54	0.22	
Q	08/27/2003	13:28	30.36	16.60	13.76	----	
Q	10/23/2003	12:03	30.36	17.50	13.05	0.24	
Q	02/19/2004	12:17	30.36	15.07	15.29	----	Trace product
Q	06/09/2004	07:34	30.36	16.15	14.21	----	
Q	08/10/2004	10:52	30.36	16.81	13.55	----	
Q	11/18/2004	08:35	30.36	17.55	13.01	0.25	
LW001S	03/31/1997	11:12	27.96	6.65	21.31		
LW001S	07/16/1997	08:15	27.96	8.34	19.62	----	
LW001S	10/21/1997	16:53	27.96	11.02	16.94	----	
LW001S	01/27/1998	13:00	27.96	8.75	19.21	----	
LW001S	05/18/1998	17:40	27.96	9.15	18.81	----	
LW001S	08/17/1998	10:54	27.96	11.67	16.29	----	
LW001S	11/13/1998	10:02	27.96	12.76	15.20	----	
LW001S	02/16/1999	13:24	27.96	6.60	21.36	----	
LW001S	05/18/1999	15:38	27.96	8.92	19.04	----	
LW001S	09/21/1999	12:10	27.96	12.20	15.76	----	
LW001S	12/06/1999	14:33	27.96	11.86	16.10	----	
LW001S	02/16/2000	10:50	27.96	9.42	18.54	----	
LW001S	05/23/2000	17:18	27.96	10.52	17.44	----	
LW001S	08/29/2000	13:58	27.96	12.51	15.45	----	
LW001S	11/09/2000	13:17	27.96	13.26	14.70	----	
LW001S	02/12/2001	15:33	27.96	12.82	15.14	----	
LW001S	06/04/2001	12:24	27.96	12.77	15.19	----	
LW001S	08/16/2001	11:37	27.96	13.45	14.51	----	
LW001S	11/28/2001	12:28	27.96	13.25	14.71	----	
LW001S	02/27/2002	14:19	27.96	9.31	18.65	----	
LW001S	03/05/2002	10:56	27.96	9.45	18.51	----	
LW001S	04/05/2002	09:08	27.96	9.60	18.36	----	
LW001S	05/29/2002	00:00	27.96	10.49	17.47	----	
LW001S	06/27/2002	14:50	27.96	11.26	16.70	----	
LW001S	08/26/2002	17:11	27.96	12.47	15.49	----	
LW001S	11/13/2002	09:07	27.96	13.72	14.24	----	
LW001S	02/11/2003	10:25	27.96	10.11	17.85	----	
LW001S	05/08/2003	08:20	27.96	9.41	18.55	----	
LW001S	08/27/2003	14:51	27.96	12.46	15.50	----	
LW001S	10/23/2003	13:58	27.96	13.32	14.64	----	
LW001S	02/19/2004	14:28	27.96	9.81	18.15	----	
LW001S	06/09/2004	09:20	27.96	11.60	16.36	----	
LW001S	08/10/2004	11:30	27.96	12.86	15.10	----	
LW001S	11/18/2004	08:57	27.96	13.42	14.54	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW002S	03/25/1997	12:22	29.56	8.06	21.50	----	
LW002S	03/31/1997	11:27	29.56	8.34	21.22	----	
LW002S	07/16/1997	08:33	29.56	10.05	19.51	----	
LW002S	10/21/1997	17:04	29.56	12.77	16.79	----	
LW002S	01/27/1998	13:25	29.56	10.39	19.17	----	
LW002S	05/18/1998	18:02	29.56	11.78	17.78	----	
LW002S	08/17/1998	10:56	29.56	13.38	16.18	----	
LW002S	11/13/1998	10:32	29.56	14.47	15.09	----	
LW002S	02/16/1999	13:42	29.56	8.27	21.29	----	
LW002S	05/18/1999	15:45	29.56	10.63	18.93	----	
LW002S	09/21/1999	12:34	29.56	13.95	15.61	----	
LW002S	12/06/1999	15:11	29.56	13.54	16.02	----	
LW002S	02/16/2000	10:38	29.56	11.08	18.48	----	
LW002S	05/23/2000	17:24	29.56	12.29	17.27	----	
LW002S	08/29/2000	14:12	29.56	14.23	15.33	----	
LW002S	11/09/2000	13:04	29.56	15.00	14.56	----	
LW002S	02/12/2001	15:30	29.56	14.52	15.04	----	
LW002S	06/04/2001	12:34	29.56	14.46	15.10	----	
LW002S	08/16/2001	11:45	29.56	15.16	14.40	----	
LW002S	11/28/2001	12:41	29.56	14.90	14.66	----	
LW002S	02/27/2002	14:19	29.56	11.02	18.54	----	
LW002S	03/05/2002	10:59	29.56	11.17	18.39	----	
LW002S	04/05/2002	08:47	29.56	11.33	18.23	----	
LW002S	05/29/2002	00:00	29.56	12.22	17.34	----	
LW002S	06/27/2002	14:56	29.56	13.00	16.56	----	
LW004S	03/31/1997	09:20	30.26	12.77	17.49	----	
LW004S	07/16/1997	07:40	30.26	14.66	15.60	----	
LW004S	10/21/1997	16:25	30.26	16.88	13.38	----	
LW004S	01/27/1998	12:00	30.26	15.13	15.13	----	
LW004S	05/18/1998	17:32	30.26	16.08	14.18	----	
LW004S	08/17/1998	11:07	30.26	17.30	12.96	----	
LW004S	11/13/1998	09:56	30.26	17.96	12.30	----	
LW004S	02/16/1999	13:16	30.26	13.10	17.16	----	
LW004S	05/18/1999	15:03	30.26	15.43	14.83	----	
LW004S	09/21/1999	11:44	30.26	17.61	12.65	----	
LW004S	12/06/1999	14:19	30.26	17.08	13.18	----	
LW004S	02/16/2000	10:31	30.26	15.84	14.42	----	
LW004S	05/23/2000	16:55	30.26	16.71	13.55	----	
LW004S	08/29/2000	13:39	30.26	17.78	12.48	----	
LW004S	11/09/2000	12:53	30.26	18.17	12.09	----	
LW004S	02/12/2001	16:38	30.26	17.08	13.18	----	
LW004S	06/04/2001	12:08	30.26	17.81	12.45	----	
LW004S	08/16/2001	11:14	30.26	18.39	11.87	----	
LW004S	11/28/2001	12:05	30.26	17.84	12.42	----	
LW004S	02/27/2002	14:01	30.26	15.82	14.44	----	
LW004S	03/05/2002	11:35	30.26	15.95	14.31	----	
LW004S	04/05/2002	08:20	30.26	16.02	14.24	----	
LW004S	05/29/2002	00:00	30.26	16.74	13.52	----	
LW004S	06/27/2002	14:39	30.26	16.89	13.37	----	
LW004S	08/26/2002	16:31	30.26	17.68	12.58	----	
LW004S	11/13/2002	08:22	30.26	19.04	11.22	----	
LW004S	02/11/2003	09:31	30.26	16.03	14.23	----	
LW004S	05/08/2003	07:43	30.26	15.75	14.51	----	
LW004S	08/27/2003	13:59	30.26	17.87	12.39	----	
LW004S	10/23/2003	13:18	30.26	18.52	11.74	----	
LW004S	02/19/2004	13:46	30.26	16.49	13.77	----	
LW004S	06/09/2004	08:31	30.32	17.24	13.08	----	New reference elevation July 2004
LW004S	08/10/2004	11:57	30.32	18.03	12.29	----	
LW004S	11/18/2004	09:23	30.32	18.61	11.71	----	
LW005S	03/25/1997	12:29	30.79	10.57	20.22	----	
LW005S	03/31/1997	11:35	30.79	10.84	19.95	----	
LW005S	07/16/1997	08:53	30.79	12.29	18.50	----	
LW005S	10/21/1997	15:16	30.79	15.00	15.79	----	
LW005S	01/27/1998	13:36	30.79	12.90	17.89	----	
LW005S	05/18/1998	18:05	30.79	14.19	16.60	----	
LW005S	08/17/1998	11:09	30.79	15.54	15.25	----	
LW005S	11/13/1998	10:38	30.79	16.55	14.24	----	
LW005S	02/16/1999	13:16	30.79	10.59	20.20	----	
LW005S	05/18/1999	16:01	30.79	13.12	17.67	----	
LW005S	09/21/1999	12:40	30.79	16.00	14.79	----	
LW005S	12/06/1999	14:47	30.79	15.64	15.15	----	
LW005S	02/16/2000	09:56	30.79	13.54	17.25	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW005S	05/23/2000	17:51	30.79	14.80	15.99	----	
LW005S	08/29/2000	14:37	30.79	16.35	14.44	----	
LW005S	11/09/2000	13:45	30.79	16.98	13.81	----	
LW005S	02/12/2001	15:13	30.79	16.51	14.28	----	
LW005S	06/04/2001	13:23	30.79	16.43	14.36	----	
LW005S	08/16/2001	12:07	30.79	17.03	13.76	----	
LW005S	11/28/2001	13:01	30.79	16.94	13.85	----	
LW005S	02/27/2002	14:39	30.79	13.48	17.31	----	
LW005S	03/05/2002	11:13	30.79	13.82	17.17	----	
LW005S	04/05/2002	08:38	30.79	13.60	17.19	----	
LW005S	05/29/2002	00:00	30.79	14.81	15.98	----	
LW005S	06/27/2002	10:43	30.79	15.15	15.64	----	
LW005S	08/26/2002	17:08	30.79	16.12	14.67	----	
LW005S	11/13/2002	09:22	30.79	17.39	13.40	----	
LW005S	02/11/2003	10:43	30.79	13.95	16.84	----	
LW005S	05/08/2003	08:32	30.79	13.58	17.21	----	
LW005S	08/27/2003	15:07	30.79	16.11	14.68	----	
LW005S	10/23/2003	14:17	30.79	16.92	13.87	----	
LW005S	02/19/2004	14:00	30.79	13.76	17.03	----	
LW005S	06/09/2004	09:34	30.79	15.50	15.29	----	
LW005S	08/10/2004	12:25	30.79	16.48	14.31	----	
LW005S	11/18/2004	09:40	30.79	17.05	13.74	----	
LW007S	03/31/1997	11:05	28.10	6.75	21.35	----	
LW007S	07/16/1997	08:05	28.10	8.62	19.48	----	
LW007S	10/21/1997	16:45	28.10	11.26	16.84	----	
LW007S	01/27/1998	12:47	28.10	8.85	19.25	----	
LW007S	05/18/1998	17:48	28.10	10.34	17.76	----	
LW007S	08/17/1998	10:48	28.10	11.85	16.25	----	
LW007S	11/13/1998	10:12	28.10	12.90	15.20	----	Strong gasoline odor
LW007S	02/16/1999	13:53	28.10	6.81	21.29	----	
LW007S	05/18/1999	15:23	28.10	9.14	18.96	----	
LW007S	09/21/1999	12:03	28.10	12.37	15.73	----	
LW007S	12/06/1999	14:27	28.10	12.00	16.10	----	
LW007S	02/16/2000	10:46	28.10	9.60	18.50	----	
LW007S	05/23/2000	17:09	28.10	10.70	17.40	----	
LW007S	08/29/2000	13:53	28.10	12.64	15.46	----	
LW007S	11/09/2000	13:14	28.10	13.36	14.74	----	
LW007S	02/12/2001	15:39	28.10	12.94	15.16	----	
LW007S	06/04/2001	12:17	28.10	12.87	15.23	----	
LW007S	08/16/2001	11:33	28.10	13.58	14.52	----	
LW007S	11/28/2001	12:22	28.10	13.34	14.76	----	
LW007S	02/27/2002	14:15	28.10	9.47	18.63	----	
LW007S	03/05/2002	10:52	28.10	9.62	18.48	----	
LW007S	04/05/2002	08:57	28.10	9.73	18.37	----	
LW007S	05/29/2002	00:00	28.10	10.63	17.47	----	
LW007S	06/27/2002	14:45	28.10	11.36	16.74	----	
LW007S	08/26/2002	17:18	28.10	12.69	15.41	----	
LW007S	11/13/2002	09:16	28.10	13.82	14.28	----	
LW007S	02/11/2003	10:37	28.10	10.18	17.92	----	
LW007S	05/08/2003	08:27	28.10	9.54	18.56	----	
LW007S	08/27/2003	14:58	28.10	12.62	15.48	----	
LW007S	10/23/2003	13:39	28.10	13.45	14.65	----	
LW007S	02/19/2004	14:42	28.10	10.01	18.09	----	
LW007S	06/09/2004	09:25	28.10	11.75	16.35	----	
LW007S	08/10/2004	11:26	28.10	13.00	15.10	----	
LW007S	11/18/2004	08:55	28.10	15.53	12.57	----	
LW008S	05/18/1999	14:55	31.28	14.84	16.44	----	
LW008S	09/21/1999	12:24	31.28	16.94	14.34	----	
LW008S	12/06/1999	14:40	31.28	16.63	14.65	----	
LW008S	02/16/2000	10:16	31.28	15.18	16.10	----	
LW008S	05/23/2000	17:42	31.28	15.88	15.40	----	
LW008S	08/29/2000	14:26	31.28	17.06	14.22	----	
LW008S	11/09/2000	13:32	31.28	17.55	13.73	----	
LW008S	02/12/2001	15:58	31.28	17.24	14.04	----	
LW008S	06/04/2001	13:05	31.28	17.14	14.14	----	
LW008S	08/16/2001	12:00	31.28	17.70	13.58	----	
LW008S	11/28/2001	12:57	31.28	17.63	13.68	0.04	
LW008S	02/27/2002	14:37	31.28	15.12	16.16	----	
LW008S	03/05/2002	11:09	31.28	15.26	16.02	----	
LW008S	04/05/2002	08:17	31.28	15.34	15.94	----	
LW008S	05/29/2002	00:00	31.28	15.91	15.37	----	
LW008S	06/27/2002	15:21	31.28	16.21	15.07	----	
LW008S	08/26/2002	16:38	31.28	16.95	14.33	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW008S	11/13/2002	08:50	31.28	17.88	13.40	----	
LW008S	02/11/2003	09:48	31.28	15.57	15.71	----	
LW008S	05/08/2003	08:00	31.28	15.11	16.17	----	
LW008S	08/27/2003	14:25	31.28	16.97	14.31	----	
LW008S	10/23/2003	12:42	31.28	17.54	13.74	----	
LW008S	02/19/2004	15:03	31.28	15.34	15.94	----	
LW008S	06/09/2004	08:43	31.28	16.50	14.78	----	
LW008S	08/10/2004	12:05	31.28	17.23	14.05	----	
LW008S	11/18/2004	09:15	31.28	17.56	13.72	----	
LW009S	05/18/1999	14:57	31.04	19.58	11.46	----	Water level appears to be more representative of lower zone
LW009S	09/21/1999	11:36	31.04	dry	----	----	
LW009S	12/06/1999	14:13	31.04	19.64	----	----	Water in endcap
LW009S	02/16/2000	10:24	31.04	19.59	----	----	Water in endcap
LW009S	05/23/2000	16:39	31.04	dry	----	----	
LW009S	08/29/2000	13:28	31.04	dry	----	----	
LW009S	11/09/2000	12:42	31.04	dry	----	----	
LW009S	02/12/2001	16:12	31.04	dry	----	----	
LW009S	06/04/2001	11:50	31.04	dry	----	----	
LW009S	08/16/2001	11:01	31.04	dry	----	----	
LW009S	11/28/2001	11:52	31.04	dry	----	----	
LW009S	02/27/2002	13:48	31.04	dry	----	----	
LW009S	03/05/2002	11:15	31.04	dry	----	----	
LW009S	04/05/2002	08:26	31.04	dry	----	----	
LW009S	05/29/2002	00:00	31.04	dry	----	----	
LW009S	06/27/2002	14:24	31.04	dry	----	----	
LW009S	08/26/2002	16:09	31.04	dry	----	----	
LW009S	11/13/2002	07:49	31.04	dry	----	----	
LW009S	02/11/2003	09:06	31.04	dry	----	----	Recorded DTW of 19.58; well most likely dry
LW009S	05/08/2003	07:11	31.04	dry	----	----	
LW009S	08/27/2003	13:48	31.04	dry	----	----	
LW009S	10/23/2003	12:46	31.04	dry	----	----	
LW009S	02/19/2004	13:04	31.04	dry	----	----	
LW009S	06/09/2004	08:12	31.04	dry	----	----	
LW009S	08/10/2004	11:53	31.04	dry	----	----	
LW009S	11/18/2004	09:28	31.04	dry	----	----	
LW010S	05/18/1999	14:59	30.75	17.24	13.51	----	
LW010S	09/21/1999	11:38	30.75	19.13	11.62	----	
LW010S	12/06/1999	14:14	30.75	18.54	12.21	----	
LW010S	02/16/2000	10:26	30.75	17.62	13.13	----	
LW010S	05/23/2000	16:41	30.75	18.25	12.50	----	
LW010S	08/29/2000	13:30	30.75	dry	----	----	
LW010S	11/09/2000	12:45	30.75	dry	----	----	
LW010S	02/12/2001	16:14	30.75	dry	----	----	
LW010S	06/04/2001	11:53	30.75	dry	----	----	
LW010S	08/16/2001	11:03	30.75	dry	----	----	
LW010S	11/28/2001	11:54	30.75	dry	----	----	
LW010S	02/27/2002	13:50	30.75	17.77	12.98	----	
LW010S	03/05/2002	11:32	30.75	17.84	12.91	----	
LW010S	04/05/2002	08:24	30.75	17.82	12.93	----	
LW010S	05/29/2002	00:00	30.75	18.22	12.53	----	
LW010S	06/27/2002	14:28	30.75	18.27	12.48	----	
LW010S	08/26/2002	16:15	30.75	dry	----	----	
LW010S	11/13/2002	08:00	30.75	dry	----	----	
LW010S	02/11/2003	09:20	30.75	17.50	13.25	----	
LW010S	05/08/2003	07:32	30.75	17.68	13.07	----	
LW010S	08/27/2003	13:51	30.75	dry	----	----	
LW010S	10/23/2003	12:51	30.75	dry	----	----	
LW010S	02/19/2004	13:26	30.75	17.77	12.98	----	
LW010S	06/09/2004	08:22	30.75	18.67	12.08	----	
LW010S	08/10/2004	11:54	30.75	dry	----	----	
LW010S	11/18/2004	09:26	30.75	dry	----	----	
LW011S	05/18/1999	15:10	29.10	11.47	17.63	----	
LW011S	09/21/1999	11:51	29.10	14.23	14.87	----	
LW011S	12/06/1999	15:05	29.10	14.00	15.10	----	
LW011S	02/16/2000	11:01	29.10	11.94	17.16	----	
LW011S	05/23/2000	11:01	29.10	13.01	16.09	----	
LW011S	08/29/2000	14:55	29.10	14.51	14.59	----	
LW011S	11/09/2000	13:36	29.10	15.48	13.92	0.37	First occurrence of product in well.
LW011S	02/12/2001	15:18	29.10	14.62	14.48	----	
LW011S	06/04/2001	13:12	29.10	14.65	14.45	----	
LW011S	08/16/2001	11:24	29.10	15.46	13.86	0.28	
LW011S	11/28/2001	12:51	29.10	15.10	14.00	----	Trace product

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW011S	02/27/2002	14:59	29.10	11.86	17.24	----	
LW011S	03/05/2002	11:40	29.10	11.96	17.14	----	
LW011S	04/05/2002	08:34	29.10	12.07	17.03	----	
LW011S	05/29/2002	00:00	29.10	13.00	16.10	----	
LW011S	06/27/2002	15:09	29.10	13.40	15.70	----	
LW011S	08/26/2002	16:48	29.10	14.37	14.73	----	
LW011S	11/13/2002	08:54	29.10	15.53	13.57	----	
LW011S	02/11/2003	10:03	29.10	12.46	16.64	----	
LW011S	05/08/2003	08:07	29.10	11.91	17.19	----	
LW011S	08/27/2003	14:36	29.10	14.32	14.78	----	
LW011S	10/23/2003	14:12	29.10	15.12	13.98	----	
LW011S	02/19/2004	14:02	29.10	12.13	16.97	----	
LW011S	06/09/2004	08:56	29.10	13.72	15.38	----	
LW011S	08/10/2004	12:08	29.10	14.66	14.44	----	
LW011S	11/18/2004	09:08	29.10	15.33	13.84	0.09	
LW013S	05/23/2000	16:51	30.17	17.23	12.94	----	
LW013S	08/29/2000	13:37	30.17	18.27	11.90	----	
LW013S	11/09/2000	12:51	30.17	18.75	11.42	----	
LW013S	02/12/2001	16:30	30.17	18.26	11.91	----	
LW013S	06/04/2001	12:06	30.17	18.30	11.87	----	
LW013S	08/16/2001	11:13	30.17	18.81	11.36	----	
LW013S	11/28/2001	12:03	30.17	18.37	11.80	----	
LW013S	02/27/2002	13:58	30.17	16.60	13.57	----	
LW013S	03/05/2002	11:33	30.17	16.68	13.49	----	
LW013S	04/05/2002	08:22	30.17	16.73	13.44	----	
LW013S	05/29/2002	00:00	30.17	17.30	12.87	----	
LW013S	06/27/2002	14:37	30.17	17.38	12.79	----	
LW013S	08/26/2002	16:30	30.17	18.11	12.06	----	
LW013S	11/13/2002	08:14	30.17	19.04	11.13	----	
LW013S	02/11/2003	09:30	30.17	16.57	13.60	----	
LW013S	05/08/2003	07:41	30.17	16.53	13.64	----	
LW013S	08/27/2003	13:57	30.17	18.27	11.90	----	
LW013S	10/23/2003	13:14	30.17	18.81	11.36	----	
LW013S	02/19/2004	13:40	30.17	16.62	13.55	----	
LW013S	06/09/2004	08:30	30.17	17.66	12.51	----	
LW013S	08/10/2004	11:55	30.17	18.33	11.84	----	
LW013S	11/18/2004	09:24	30.17	18.92	11.25	----	
LW019S	10/23/2003	11:54	27.72	16.62	11.10	----	
LW019S	02/19/2004	15:00	27.72	13.84	13.88	----	
LW019S	06/09/2004	07:27	27.72	15.46	12.26	----	
LW019S	08/10/2004	11:07	27.72	16.35	11.37	----	
LW019S	11/18/2004	08:51	27.72	17.18	10.54	----	
LW020S	10/23/2003	12:14	29.51	14.86	14.65	----	
LW020S	02/19/2004	14:45	29.51	12.55	16.96	----	
LW020S	06/09/2004	07:47	29.51	14.18	15.33	----	
LW020S	08/10/2004	11:05	29.51	14.90	14.61	----	
LW020S	11/18/2004	08:46	29.51	14.42	15.09	----	
LW021S	10/23/2003	12:16	30.29	16.57	13.72	----	
LW021S	02/19/2004	14:54	30.29	13.82	17.29	1.03	
LW021S	06/09/2004	07:44	30.29	15.36	15.02	0.11	
LW021S	08/10/2004	11:02	30.29	16.40	14.03	0.17	
LW021S	11/18/2004	08:43	30.29	16.51	13.87	0.11	
LW027S	10/23/2003	12:20	30.59	25.40	5.19	----	
LW027S	02/19/2004	12:44	30.59	22.07	9.07	0.69	
LW027S	06/09/2004	07:39	30.59	21.26	9.33	----	
LW027S	08/10/2004	10:58	30.59	24.56	6.13	0.12	
LW027S	11/18/2004	07:39	30.59	24.68	5.93	0.02	
LW028S	10/23/2003	14:26	30.98	dry	----	----	
LW028S	02/19/2004	15:17	30.98	12.87	18.11	----	
LW028S	06/09/2004	09:52	30.98	15.15	15.83	----	
LW028S	08/10/2004	11:45	30.98	dry	----	----	
LW028S	11/18/2004	09:45	30.98	dry	----	----	
LW029S	10/23/2003	14:39	31.34	18.88	12.46	----	
LW029S	02/19/2004	15:30	31.34	16.52	14.82	----	
LW029S	06/09/2004	09:43	31.34	17.85	13.49	----	
LW029S	08/10/2004	11:50	31.34	18.56	12.78	----	
LW029S	11/18/2004	09:58	31.34	18.97	12.37	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW030S	10/23/2003	14:41	30.08	17.91	12.17	----	
LW030S	02/19/2004	15:32	30.08	15.58	14.50	----	
LW030S	06/09/2004	09:46	30.08	16.91	13.17	----	
LW030S	08/10/2004	11:52	30.08	17.62	12.46	----	
LW030S	11/18/2004	09:59	30.08	17.96	12.12	----	
LW031S	10/23/2003	14:30	31.26	18.87	12.39	----	
LW031S	02/19/2004	15:21	31.26	16.07	15.19	----	
LW031S	06/09/2004	09:56	31.26	17.67	13.59	----	
LW031S	08/10/2004	11:42	31.26	16.52	14.74	----	
LW031S	11/18/2004	09:50	31.26	18.93	12.33	----	
LW032S	10/23/2003	14:32	30.71	17.02	13.69	----	
LW032S	02/19/2004	15:29	30.71	13.59	17.12	----	
LW032S	06/09/2004	09:58	30.71	15.66	15.05	----	
LW032S	08/10/2004	11:46	30.71	16.67	14.04	----	
LW032S	11/18/2004	09:52	30.71	17.04	13.67	----	
LW033S	10/23/2003	14:35	29.89	dry	----	----	
LW033S	02/19/2004	15:23	29.89	13.89	16.00	----	
LW033S	06/09/2004	10:02	29.89	15.60	14.29	----	
LW033S	08/10/2004	11:44	29.89	16.69	13.20	----	
LW033S	11/18/2004	09:51	29.89	dry	----	----	
LW034S	10/23/2003	14:24	30.93	16.99	13.94	----	
LW034S	02/19/2004	15:15	30.93	13.29	17.64	----	
LW034S	06/09/2004	09:50	30.93	15.53	15.40	----	
LW034S	08/10/2004	11:39	30.93	16.61	14.32	----	
LW034S	11/18/2004	09:46	30.93	17.00	13.93	----	
LW040S	11/18/2004	08:59	33.70	dry	----	----	
LW041S	11/18/2004	10:02	29.85	dry	----	----	
LW042S	11/18/2004	10:00	30.45	18.89	11.56	----	
LW043S			30.66				
LW043S	11/18/2004	09:49	30.66	18.44	12.22	----	
LW044S	11/18/2004	09:53	30.86	17.44	13.42	----	
LW101S	03/31/1997	09:54	29.41	4.51	24.90	----	
LW101S	07/16/1997	09:01	29.41	6.81	22.60	----	
LW101S	10/21/1997	18:01	29.41	7.28	22.13	----	
LW101S	01/27/1998	14:15	29.41	4.10	25.31	----	
LW101S	05/18/1998	18:18	29.41	6.68	22.73	----	
LW101S	08/17/1998	11:21	29.41	8.14	21.27	----	
LW101S	11/13/1998	10:48	29.41	8.61	20.80	----	
LW101S	02/16/1999	14:11	29.41	3.21	26.20	----	
LW101S	05/18/1999	16:17	29.41	6.00	23.41	----	
LW101S	09/21/1999	12:54	29.41	8.60	20.81	----	
LW101S	12/06/1999	14:58	29.41	6.98	22.43	----	
LW101S	02/16/2000	09:44	29.41	4.96	24.45	----	
LW101S	05/23/2000	18:06	29.41	6.83	22.58	----	
LW101S	08/29/2000	14:47	29.41	8.67	20.74	----	
LW101S	11/09/2000	13:56	29.41	9.39	20.02	----	
LW101S	02/12/2001	15:02	29.41	8.02	21.39	----	
LW101S	06/04/2001	13:35	29.41	8.40	21.01	----	
LW101S	08/16/2001	12:20	29.41	9.44	19.97	----	
LW101S	11/28/2001	13:12	29.41	8.58	20.83	----	
LW101S	02/27/2002	14:52	29.41	5.70	23.71	----	
LW101S	06/27/2002	15:32	29.41	7.80	21.61	----	
LW101S	08/26/2002	17:34	29.41	8.85	20.56	----	
LW101S	11/13/2002	09:35	29.41	9.92	19.49	----	
LW101S	02/11/2003	10:59	29.41	5.27	24.14	----	
LW101S	05/08/2003	08:43	29.41	5.40	24.01	----	
LW101S	08/27/2003	15:14	29.41	8.59	20.82	----	
LW102S	03/31/1997	10:01	25.77	1.86	23.91	----	
LW102S	07/16/1997	09:09	25.77	3.91	21.86	----	
LW102S	10/21/1997	17:59	25.77	4.03	21.74	----	
LW102S	01/27/1998	14:07	25.77	1.26	24.51	----	
LW102S	05/18/1998	18:15	25.77	3.57	22.20	----	
LW102S	08/17/1998	11:18	25.77	4.88	20.89	----	
LW102S	11/13/1998	10:45	25.77	5.14	20.63	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW102S	02/16/1999	14:08	25.77	0.45	25.32	----	
LW102S	05/18/1999	16:12	25.77	3.24	22.53	----	
LW102S	09/21/1999	12:52	25.77	5.33	20.44	----	
LW102S	12/06/1999	14:56	25.77	3.67	22.10	----	
LW102S	02/16/2000	09:41	25.77	1.91	23.86	----	
LW102S	05/23/2000	18:03	25.77	3.72	22.05	----	
LW102S	08/29/2000	14:45	25.77	5.40	20.37	----	
LW102S	11/09/2000	13:53	25.77	5.94	19.83	----	
LW102S	02/12/2001	15:00	25.77	4.52	21.25	----	
LW102S	06/04/2001	13:32	25.77	4.93	20.84	----	
LW102S	08/16/2001	12:17	25.77	5.96	19.81	----	
LW102S	11/28/2001	13:10	25.77	5.15	20.62	----	
LW102S	02/27/2002	14:48	25.77	2.14	23.63	----	
LW102S	06/27/2002	15:30	25.77	4.50	21.27	----	
LW102S	08/26/2002	17:39	25.77	5.48	20.29	----	
LW102S	11/13/2002	09:32	25.77	6.50	19.27	----	
LW102S	02/11/2003	10:55	25.77	1.88	23.89	----	
LW102S	05/08/2003	08:40	25.77	2.22	23.55	----	
LW102S	08/27/2003	15:17	25.77	5.24	20.53	----	
LW103S	03/31/1997	09:50	29.07	5.50	23.57	----	
LW103S	07/16/1997	08:59	29.07	6.93	22.14	----	
LW103S	10/21/1997	18:03	29.07	7.08	21.99	----	
LW103S	01/27/1998	14:20	29.07	5.11	23.96	----	
LW103S	05/18/1998	18:21	29.07	6.57	22.50	----	
LW103S	08/17/1998	11:24	29.07	7.80	21.27	----	
LW103S	11/13/1998	10:51	29.07	7.91	21.16	----	
LW103S	02/16/1999	14:14	29.07	4.54	24.53	----	
LW103S	05/18/1999	16:20	29.07	6.20	22.87	----	
LW103S	09/21/1999	12:57	29.07	8.30	20.77	----	
LW103S	12/06/1999	15:00	29.07	6.60	22.47	----	
LW103S	02/16/2000	09:46	29.07	5.50	23.57	----	
LW103S	05/23/2000	18:10	29.07	6.64	22.43	----	
LW103S	08/29/2000	14:50	29.07	8.41	20.66	----	
LW103S	11/09/2000	13:58	29.07	8.78	20.29	----	
LW103S	02/12/2001	15:04	29.07	7.39	21.68	----	
LW103S	06/04/2001	13:37	29.07	7.83	21.24	----	
LW103S	08/16/2001	12:23	29.07	9.07	20.00	----	
LW103S	11/28/2001	13:16	29.07	8.02	21.05	----	
LW103S	02/27/2002	14:50	29.07	5.26	23.81	----	
LW103S	06/27/2002	15:34	29.07	7.42	21.65	----	
LW103S	08/26/2002	17:36	29.07	8.57	20.50	----	
LW103S	11/13/2002	09:37	29.07	9.48	19.59	----	
LW103S	02/11/2003	11:03	29.07	5.65	23.42	----	
LW103S	05/08/2003	08:46	29.07	5.86	23.21	----	
LW103S	08/27/2003	15:15	29.07	8.33	20.74	----	
LW104S	03/31/1997	10:06	26.57	3.55	23.02	----	
LW104S	07/16/1997	08:54	26.57	5.71	20.86	----	
LW104S	10/21/1997	16:22	26.57	5.71	20.86	----	
LW104S	01/27/1998	14:00	26.57	2.84	23.73	----	
LW104S	05/18/1998	18:11	26.57	5.17	21.40	----	
LW104S	08/17/1998	11:15	26.57	6.64	19.93	----	
LW104S	11/13/1998	10:41	26.57	6.72	19.85	----	
LW104S	02/16/1999	14:03	26.57	2.11	24.46	----	
LW104S	05/18/1999	16:08	26.57	4.97	21.60	----	
LW104S	09/21/1999	12:48	26.57	7.18	19.39	----	
LW104S	12/06/1999	14:54	26.57	5.00	21.57	----	
LW104S	02/16/2000	09:39	26.57	3.61	22.96	----	
LW104S	05/23/2000	17:59	26.57	5.61	20.96	----	
LW104S	08/29/2000	14:43	26.57	7.08	19.49	----	
LW104S	11/09/2000	13:51	26.57	7.49	19.08	----	
LW104S	02/12/2001	14:57	26.57	6.28	20.29	----	
LW104S	06/04/2001	13:30	26.57	6.64	19.93	----	
LW104S	08/16/2001	12:15	26.57	7.56	19.01	----	
LW104S	11/28/2001	13:06	26.57	6.30	20.27	----	
LW104S	02/27/2002	14:46	26.57	4.07	22.50	----	
LW104S	06/27/2002	15:27	26.57	6.28	20.29	----	
LW104S	08/26/2002	17:41	26.57	7.13	19.44	----	
LW104S	11/13/2002	09:30	26.57	7.85	18.72	----	
LW104S	02/11/2003	10:51	26.57	3.72	22.85	----	
LW104S	05/08/2003	08:38	26.57	4.94	21.63	----	
LW104S	08/27/2003	15:19	26.57	6.87	19.70	----	
RW1	05/18/1999	15:06	31.46	15.70	15.76	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
RW1	09/21/1999	11:46	31.46	18.02	13.44	----	
RW1	12/06/1999	14:43	31.46	17.73	13.73	----	
RW1	02/16/2000	10:33	31.46	16.14	15.32	----	
RW1	05/23/2000	17:46	31.46	17.09	14.37	----	
RW1	08/29/2000	14:28	31.46	18.29	13.17	----	
RW1	11/09/2000	12:57	31.46	18.67	12.79	----	
RW1	02/12/2001	16:44	31.46	18.30	13.16	----	
RW1	06/04/2001	13:17	31.46	18.22	13.24	----	
RW1	08/16/2001	10:55	31.46		31.46	----	Vapor/water recovery system test running - not measured
RW1	11/28/2001	12:02	31.46	18.55	12.91	----	
RW1	02/27/2002	14:03	31.46	16.12	15.34	----	
RW1	03/05/2002	11:38	31.46	16.33	15.13	----	
RW1	04/05/2002	08:27	31.46	16.28	15.18	----	
RW1	05/29/2002	00:00	31.46	17.00	14.46	----	
RW1	06/27/2002	15:16	31.46	17.33	14.13	----	
RW1	08/26/2002	16:40	31.46	18.00	13.46	----	
RW1	11/13/2002	08:26	31.46	18.85	12.61	----	
RW1	02/11/2003	09:34	31.46	16.50	14.96	----	
RW1	05/08/2003	07:46	31.46	16.23	15.23	----	
RW1	08/27/2003	14:04	31.46	18.09	13.37	----	
RW1	10/23/2003	13:23	31.46	18.55	12.91	----	
RW1	02/19/2004	13:52	31.46	16.31	15.15	----	
RW1	06/09/2004	08:35	31.46	17.60	13.86	----	
RW1	08/10/2004	12:03	31.46	18.22	13.24	----	
RW1	11/18/2004	09:21	31.46	18.61	12.85	----	
RW3	12/06/1999	15:24	29.96	14.20	15.76	----	
RW3	02/16/2000	10:37	29.96	11.88	18.08	----	
RW3	05/23/2000	17:26	29.96	13.02	16.94	----	
RW3	08/29/2000	13:42	29.96	14.88	15.08	----	
RW3	11/09/2000	13:03	29.96	15.58	14.38	----	
RW3	02/12/2001	15:28	29.96	15.13	14.83	----	
RW3	06/04/2001	12:30	29.96	15.09	14.87	----	
RW3	08/16/2001	11:44	29.96	15.74	14.22	----	
RW3	11/28/2001	12:40	29.96	15.52	14.44	----	
RW3	02/27/2002	14:26	29.96	11.80	18.16	----	
RW3	03/05/2002	11:02	29.96	11.94	18.02	----	
RW3	04/05/2002	08:44	29.96	12.06	17.90	----	
RW3	05/29/2002	00:00	29.96	13.00	16.96	----	
RW3	06/27/2002	14:59	29.96	13.64	16.32	----	
RW3							Abandoned August 2003
PZ1	05/23/2000	17:47	28.04	14.21	13.83	----	
PZ1	08/29/2000	14:30	28.04	15.33	12.71	----	
PZ1	11/09/2000	12:55	28.04	15.68	12.36	----	
PZ1	02/12/2001	16:42	28.04	15.30	12.74	----	
PZ1	06/04/2001	13:20	28.04	15.29	12.75	----	
PZ1	08/16/2001	11:17	28.04	15.94	12.10	----	
PZ1	11/28/2001	12:09	28.04	15.48	12.56	----	
PZ1	02/27/2002	14:02	28.04	13.28	14.76	----	
PZ1	03/05/2002	11:34	28.04	13.40	14.64	----	
PZ1	04/05/2002	08:32	28.04	13.44	14.60	----	
PZ1	05/29/2002	00:00	28.04	14.16	13.88	----	
PZ1	06/27/2002	15:17	28.04	14.50	13.54	----	
PZ1	08/26/2002	16:33	28.04	15.17	12.87	----	
PZ1	11/13/2002	08:42	28.04	15.83	12.21	----	
PZ1	02/11/2003	09:36	28.04	13.58	14.46	----	
PZ1	05/08/2003	07:58	28.04	13.25	14.79	----	
PZ1	08/27/2003	14:20	28.04	15.32	12.72	----	
PZ1	10/23/2003	13:19	28.04	15.75	12.29	----	
PZ1	02/19/2004	13:56	28.04	13.41	14.63	----	
PZ1	06/09/2004	08:37	28.04	14.75	13.29	----	
PZ1	08/10/2004	12:00	28.04	15.42	12.62	----	
PZ1	11/18/2004	09:22	28.04	15.46	12.58	----	
PZ2	06/27/2002	15:18	31.97	18.31	13.66	----	
PZ2	08/26/2002	16:34	31.97	18.88	13.09	----	
PZ2	11/13/2002	08:25	31.97	19.40	12.57	----	
PZ2	02/11/2003	09:44	31.97	17.46	14.51	----	
PZ2	05/08/2003	07:45	31.97	17.15	14.82	----	
PZ2	08/27/2003	14:03	31.97	19.02	12.95	----	
PZ2	10/23/2003	13:21	31.97	19.27	12.75	0.06	
PZ2	02/19/2004	13:50	31.97	17.36	14.61	----	
PZ2	06/09/2004	08:33	31.97	18.51	13.46	----	
PZ2	08/10/2004	12:02	31.97	19.12	12.85	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
PZ2	11/18/2004	09:20	31.97	19.24	12.73	----	
PZ3	06/27/2002	15:19	31.12	19.35	11.77	----	
PZ3	08/26/2002	16:35	31.12	19.74	11.38	----	
PZ3	11/13/2002	08:45	31.12	16.87	----	----	
PZ3	02/11/2003	09:40	31.12	19.05	12.07	----	
PZ3	05/08/2003	07:53	31.12	18.95	12.17	----	
PZ3	08/27/2003	14:26	31.12	19.82	11.30	----	
PZ3	10/23/2003	12:39	31.12	dry	----	----	
PZ3	02/19/2004	15:09	31.12	19.07	12.05	----	
PZ3	06/09/2004	08:39	31.12	19.53	11.59	----	
PZ3	08/10/2004	12:04	31.12	19.86	11.26	----	
PZ3	11/18/2004	09:19	31.12	dry	----	----	
PZ4	06/27/2002	15:20	28.47	dry	----	----	
PZ4	08/26/2002	16:36	28.47	dry	----	----	
PZ4	11/13/2002	08:48	28.47	16.87	11.60	----	
PZ4	02/11/2003	09:41	28.47	dry	----	----	
PZ4	05/08/2003	07:52	28.47	17.78	10.69	----	
PZ4	08/27/2003	14:27	28.47	dry	----	----	
PZ4	10/23/2003	12:36	28.47	dry	----	----	
PZ4	02/19/2004	15:08	28.47	dry	----	----	
PZ4	06/09/2004	08:41	28.47	dry	----	----	
PZ4	08/10/2004	12:03	28.47	dry	----	----	
PZ4	11/18/2004	09:18	28.47	dry	----	----	
OX001S	06/27/2002	15:13	33.38	17.85	15.53	----	
OX001S	08/26/2002	16:45	33.38	18.75	14.63	----	
OX001S	11/13/2002	08:30	33.38	19.92	13.46	----	
OX001S	02/11/2003	09:59	33.38	16.96	16.42	----	
OX001S	05/08/2003	08:04	33.38	16.48	16.90	----	
OX001S	08/27/2003	14:38	33.38	18.76	14.62	----	
OX001S	10/23/2003	14:09	33.38	19.51	13.87	----	
OX001S	02/19/2004	14:10	33.38	16.64	16.74	----	
OX001S	06/09/2004	08:45	33.38	18.16	15.22	----	
OX001S	08/10/2004	12:07	33.38	19.08	14.30	----	
OX001S	11/18/2004	09:07	33.38	19.63	13.77	0.03	
OX002S	06/27/2002	15:12	28.69	13.22	15.47	----	
OX002S	08/26/2002	16:44	28.69	14.26	14.43	----	
OX002S	11/13/2002	08:33	28.81	15.39	13.42	----	New reference elevation September 2002
OX002S	02/11/2003	10:06	28.81	12.39	16.42	----	
OX002S	05/08/2003	08:09	28.81	11.90	16.91	----	
OX002S	08/27/2003	14:33	28.81	14.55	14.26	----	
OX002S	10/23/2003	14:14	28.81	15.22	13.84	0.31	
OX002S	02/19/2004	14:07	28.81	12.06	16.75	----	
OX002S	06/09/2004	08:52	28.95	13.61	15.34	----	New reference elevation July 2004
OX002S	08/10/2004	12:09	28.95	14.53	14.42	----	
OX002S	11/18/2004	09:10	28.95	15.18	13.87	0.13	
OX003S	06/27/2002	15:14	30.01	14.65	15.36	----	
OX003S	08/26/2002	16:42	30.01	15.50	14.51	----	
OX003S	11/13/2002	08:31	30.01	16.65	13.36	----	
OX003S	02/11/2003	09:58	30.01	13.78	16.23	----	
OX003S	05/08/2003	08:03	30.01	13.30	16.71	----	
OX003S	08/27/2003	14:40	30.01	15.52	14.49	----	
OX003S	10/23/2003	14:10	30.01	16.22	13.79	----	
OX003S	02/19/2004	14:09	30.01	13.47	16.54	----	
OX003S	06/09/2004	08:51	30.01	14.96	15.05	----	
OX003S	08/10/2004	12:06	30.01	15.81	14.20	----	
OX003S	11/18/2004	09:13	30.01	16.61	13.66	0.33	
OX004S	06/27/2002	15:15	33.42	19.07	14.35	----	
OX004S	08/26/2002	16:39	33.42	19.74	13.68	----	
OX004S	11/13/2002	08:24	33.54	20.73	12.81	----	New reference elevation September 2002
OX004S	02/11/2003	09:38	33.54	18.39	15.15	----	
OX004S	05/08/2003	07:47	33.54	19.07	14.47	----	
OX004S	08/27/2003	14:07	33.54	19.95	13.59	----	
OX004S	10/23/2003	12:43	33.54	dry	----	----	
OX004S	02/19/2004	13:54	33.54	18.21	15.33	----	
OX004S	06/09/2004	08:38	33.51	19.44	14.07	----	New reference elevation July 2004
OX004S	08/10/2004	12:06	33.51	20.12	13.39	----	
OX004S	11/18/2004	09:17	33.51	dry	----	----	
OX005S	10/23/2003	13:44	30.74	16.15	14.59	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
OX005S	02/19/2004	14:25	30.74	12.46	18.28	----	
OX005S	06/09/2004	09:14	30.74	14.35	16.39	----	
OX005S	08/10/2004	12:18	30.74	15.65	15.09	----	
OX005S	11/18/2004	08:58	30.74	16.26	14.48	----	
OX006S	10/23/2003	13:45	30.92	16.43	14.49	----	
OX006S	02/19/2004	14:24	30.92	12.85	18.07	----	
OX006S	06/09/2004	09:12	31.03	14.71	16.32	----	New reference elevation July 2004
OX006S	08/10/2004	12:17	31.03	16.09	14.94	----	
OX006S	11/18/2004	09:00	31.03	16.66	14.37	----	
OX007S	10/23/2003	13:46	30.68	16.25	14.43	----	
OX007S	02/19/2004	14:23	30.68	12.67	18.01	----	
OX007S	06/09/2004	09:11	30.68	14.55	16.13	----	
OX007S	08/10/2004	12:16	30.68	15.79	14.89	----	
OX007S	11/18/2004	09:02	30.68	16.34	14.34	----	
OX008S	10/23/2003	13:47	30.74	16.41	14.33	----	
OX008S	02/19/2004	14:19	30.74	12.96	17.78	----	
OX008S	06/09/2004	09:09	30.74	14.81	15.93	----	
OX008S	08/10/2004	12:15	30.74	15.96	14.78	----	
OX008S	11/18/2004	08:23	30.74	16.52	14.22	----	
OX009S	08/10/2004	12:12	31.14	16.92	14.22		Reference elevation July 2004
Deep Wells:							
B2	08/11/1993	10:02	30.31	25.44	4.87	----	Slight sheen, slight to mod solvent-like odor
B2	10/26/1993	13:32	30.31	25.25	5.06	----	
B2	11/17/1993	13:32	30.31	25.23	5.08	----	
B2	12/17/1993	12:59	30.31	23.88	6.43	----	
B2	01/17/1994	13:12	30.31	23.99	6.32	----	
B2	02/18/1994	14:20	30.31	23.73	6.58	----	
B2	03/18/1994	12:59	30.31	23.15	7.16	----	
B2	04/18/1994	14:42	30.31	24.35	5.96	----	
B2	05/18/1994	15:22	30.31	23.12	7.19	----	
B2	06/17/1994	14:54	30.31	22.90	7.41	----	
B2	07/19/1994	09:20	30.31	24.38	5.93	----	
B2	08/17/1994	07:35	30.31	25.22	5.09	----	
B2	09/16/1994	07:27	30.31	25.89	4.42	----	
B2	10/17/1994	09:03	30.31	25.43	4.88	----	
B2	11/21/1994	11:51	30.31	24.56	5.75	----	
B2	12/19/1994	11:10	30.31	21.82	8.49	----	
B2	01/18/1995	11:18	30.31	18.93	11.38	----	
B2	02/21/1995	13:23	30.31	17.12	13.19	----	
B2	03/21/1995	13:05	30.31	20.37	9.94	----	
B2	04/19/1995	12:48	30.31	21.21	9.10	----	
B2	05/19/1995	13:38	30.31	19.30	11.01	----	
B2	07/17/1995	13:55	30.31	22.72	7.59	----	
B2	08/22/1995	07:53	30.31	24.42	5.89	----	
B2	09/22/1995	08:28	30.31	25.28	5.03	----	
B2	11/20/1995	07:57	30.31	22.02	8.29	----	
B2	12/01/1995	08:29	30.31	13.63	16.68	----	
B2	12/19/1995	07:26	30.31	15.57	14.74	----	
B2	01/19/1996	08:38	30.31	16.48	13.83	----	
B2	02/20/1996	10:42	30.31	10.63	19.68	----	
B2	03/19/1996	09:23	30.31	16.61	13.70	----	
B2	04/19/1996	11:53	30.31	16.20	14.11	----	
B2	07/22/1996	14:24	30.31	22.29	8.02	----	
B2	08/20/1996	14:20	30.31	23.43	6.88	----	
B2	09/24/1996	08:11	30.31	24.30	6.01	----	
B2	10/28/1996	11:09	30.31	23.76	6.55	----	
B2	12/13/1996	10:47	30.31	16.70	13.61	----	
B2	03/25/1997	12:02	30.31	15.85	14.46	----	
B2	03/31/1997	09:27	30.31	14.91	15.40	----	
B2	07/16/1997	07:45	30.31	19.91	10.40	----	
B2	10/21/1997	16:30	30.31	23.56	6.75	----	
B2	01/27/1998	12:06	30.31	19.32	10.99	----	
B2	05/18/1998	17:54	30.31	18.80	11.51	----	
B2	08/17/1998	10:23	30.31	24.38	5.93	----	
B2	11/13/1998	10:17	30.31	25.33	4.98	----	
B2	02/16/1999	13:34	30.31	19.64	10.67	----	
B2	05/18/1999	15:50	30.31	19.04	11.27	----	
B2	09/21/1999	12:18	30.31	25.34	4.97	----	
B2	12/06/1999	14:39	30.31	20.25	10.06	----	
B2	02/16/2000	10:56	30.31	20.57	9.74	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
B2	05/23/2000	17:33	30.31	20.99	9.32	----	
B2	08/29/2000	14:20	30.31	25.38	4.93	----	
B2	11/09/2000	13:29	30.31	25.31	5.00	----	
B2	02/12/2001	15:27	30.31	24.62	5.69	----	
B2	06/04/2001	13:04	30.31	24.84	5.47	----	
B2	08/16/2001	11:58	30.31	26.75	3.56	----	
B2	11/28/2001	12:46	30.31	24.14	6.17	----	
B2	02/27/2002	14:35	30.31	22.90	7.41	----	
B2	06/27/2002	15:07	30.31	20.16	10.15	----	
B2	08/26/2002	17:01	30.31	25.32	4.99	----	
B2	11/13/2002	09:03	30.31	25.28	5.03	----	
B2	02/11/2003	10:14	30.31	23.58	6.73	----	
B2	05/08/2003	08:13	30.31	21.33	8.98	----	
B2	08/27/2003	15:32	30.31	24.25	6.06	----	
B2	10/23/2003	14:08	30.31	25.85	4.46	----	
B2	02/19/2004	14:12	30.31	22.21	8.10	----	
B2	06/09/2004	09:02	30.31	21.45	8.86	----	
B2	08/10/2004	08:50	30.31	25.73	4.58	----	
B2	08/10/2004	10:29	30.31	25.96	4.35	----	
B2	11/18/2004	08:13	30.31	25.08	5.23	----	
G1A	03/25/1997	11:55	29.72	14.84	14.88	----	
G1A	03/31/1997	09:11	29.72	14.28	15.44	----	
G1A	07/16/1997	07:33	29.72	18.94	10.78	----	
G1A	10/21/1997	16:18	29.72	22.44	7.28	----	
G1A	01/27/1998	11:46	29.72	18.42	11.30	----	
G1A	05/18/1998	17:31	29.72	18.05	11.67	----	
G1A	08/17/1998	10:07	29.72	23.35	6.37	----	
G1A	11/13/1998	09:54	29.72	24.59	5.13	----	
G1A	02/16/1999	13:14	29.72	18.28	11.44	----	
G1A	05/18/1999	14:51	29.72	18.42	11.30	----	
G1A	09/21/1999	11:29	29.72	24.32	5.40	----	
G1A	12/06/1999	14:05	29.72	19.82	9.90	----	
G1A	02/16/2000	10:18	29.72	19.81	9.91	----	
G1A	05/23/2000	16:31	29.72	20.08	9.64	----	Replaced lock and tubing
G1A	08/29/2000	13:13	29.72	24.36	5.36	----	
G1A	11/09/2000	12:32	29.72	24.85	4.87	----	
G1A	02/12/2001	16:01	29.72	24.08	5.64	----	
G1A	06/04/2001	11:40	29.72	24.10	5.62	----	
G1A	08/16/2001	10:52	29.72	25.51	4.21	----	
G1A	11/28/2001	11:32	29.72	23.84	5.88	----	
G1A	02/27/2002	13:39	29.72	21.96	7.76	----	
G1A	06/27/2002	14:17	29.72	19.48	10.24	----	
G1A	08/26/2002	16:06	29.72	24.36	5.36	----	
G1A	11/13/2002	07:35	29.72	24.60	5.12	----	
G1A	02/11/2003	08:59	29.72	22.32	7.40	----	
G1A	05/08/2003	06:58	29.72	20.51	9.21	----	
G1A	08/27/2003	13:36	29.72	24.16	5.56	----	
G1A	10/23/2003	12:37	29.72	25.20	4.52	----	
G1A	02/19/2004	12:57	29.72	21.51	8.21	----	
G1A	06/09/2004	07:55	29.72	20.91	8.81	----	
G1A	08/10/2004	08:46	29.72	25.07	4.65	----	
G1A	08/10/2004	10:25	29.72	25.24	4.48	----	
G1A	11/18/2004	08:09	29.72	24.56	5.16	----	
J2	03/25/1997	12:18	29.65	15.22	14.43	----	
J2	03/31/1997	11:21	29.65	14.38	15.27	----	
J2	07/16/1997	08:24	29.65	19.28	10.37	----	
J2	10/21/1997	17:00	29.65	23.02	6.63	----	
J2	01/27/1998	13:19	29.65	18.69	10.96	----	
J2	05/18/1998	18:00	29.65	18.14	11.51	----	
J2	08/17/1998	10:21	29.65	23.70	5.95	----	
J2	11/13/1998	10:28	29.65	24.64	5.01	----	
J2	02/16/1999	13:40	29.65	19.00	10.65	----	
J2	05/18/1999	15:46	29.65	18.40	11.25	----	
J2	09/21/1999	12:30	29.65	24.73	4.92	----	
J2	12/06/1999	15:08	29.65	19.53	10.12	----	
J2	02/16/2000	11:07	29.65	19.89	9.76	----	
J2	05/23/2000	17:28	29.65	20.33	9.32	----	
J2	08/29/2000	14:15	29.65	24.67	4.98	----	
J2	11/09/2000	13:26	29.65	24.66	4.99	----	
J2	02/12/2001	15:23	29.65	23.92	5.73	----	
J2	06/04/2001	13:02	29.65	24.17	5.48	----	
J2	08/16/2001	11:51	29.65	25.57	4.08	----	
J2	11/28/2001	12:36	29.65	23.45	6.20	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
J2	02/27/2002	14:31	29.65	22.21	7.44	----	
J2	06/27/2002	15:03	29.65	19.48	10.17	----	
J2	08/26/2002	16:56	29.65	24.67	4.98	----	
J2	11/13/2002	08:59	29.65	24.60	5.05	----	
J2	02/11/2003	10:19	29.65	22.95	6.70	----	
J2	05/08/2003	08:16	29.65	20.65	9.00	----	
J2	08/27/2003	14:48	29.65	24.12	5.53	----	
J2	10/23/2003	13:54	29.65	25.18	4.47	----	
J2	02/19/2004	14:17	29.65	21.52	8.13	----	
J2	06/09/2004	09:07	29.65	20.76	8.89	----	
J2	08/10/2004	08:40	29.65	25.00	4.65	----	
J2	08/10/2004	10:27	29.65	25.24	4.41	----	
J2	11/18/2004	08:20	29.65	24.39	5.26	----	
J3	03/25/1997	12:20	29.58	14.70	14.88	----	
J3	03/31/1997	11:25	29.58	14.03	15.55	----	
J3	07/16/1997	08:25	29.58	18.91	10.67	----	
J3	10/21/1997	17:02	29.58	22.37	7.21	----	
J3	01/27/1998	13:21	29.58	18.28	11.30	----	
J3	05/18/1998	17:58	29.58	17.84	11.74	----	
J3	08/17/1998	10:22	29.58	23.12	6.46	----	
J3	11/13/1998	10:26	29.58	24.14	5.44	----	
J3	02/16/1999	13:41	29.58	18.32	11.26	----	
J3	05/18/1999	15:48	29.58	18.01	11.57	----	
J3	09/21/1999	12:31	29.58	24.12	5.46	----	
J3	12/06/1999	15:09	29.58	19.31	10.27	----	
J3	02/16/2000	10:07	29.58	19.50	10.08	----	
J3	05/23/2000	17:29	29.58	19.86	9.72	----	
J3	08/29/2000	14:17	29.58	24.05	5.53	----	
J3	11/09/2000	13:27	29.58	24.24	5.34	----	
J3	02/12/2001	15:24	29.58	23.45	6.13	----	
J3	06/04/2001	12:44	29.58	23.62	5.96	----	
J3	08/16/2001	11:50	29.58	24.98	4.60	----	
J3	11/28/2001	12:37	29.58	22.98	6.60	----	
J3	02/27/2002	14:32	29.58	21.52	8.06	----	
J3	06/27/2002	15:04	29.58	19.14	10.44	----	
J3	08/26/2002	16:57	29.58	23.99	5.59	----	
J3	11/13/2002	08:58	29.58	24.10	5.48	----	
J3	02/11/2003	10:20	29.58	22.28	7.30	----	
J3	05/08/2003	08:17	29.58	20.16	9.42	----	
J3	08/27/2003	14:49	29.58	23.60	5.98	----	
J3	10/23/2003	13:56	29.58	24.70	4.88	----	
J3	02/19/2004	14:16	29.58	21.18	8.40	----	
J3	06/09/2004	09:06	29.58	20.40	9.18	----	
J3	08/10/2004	08:41	29.58	24.50	5.08	----	
J3	08/10/2004	10:28	29.58	24.67	4.91	----	
J3	11/18/2004	08:17	29.58	23.86	5.72	----	
O	03/25/1997	11:40	32.03	17.01	15.02	----	
O	03/31/1997	08:48	32.03	16.39	15.64	----	
O	07/16/1997	07:05	32.03	21.93	10.10	----	
O	10/21/1997	16:01	32.03	22.23	9.80	----	
O	01/27/1998	11:03	32.03	20.51	11.52	----	
O	05/18/1998	17:14	32.03	20.25	11.78	----	
O	08/17/1998	10:13	32.03	25.42	6.61	----	
O	11/13/1998	09:31	32.03	26.49	5.54	----	
O	02/16/1999	12:45	32.03	20.25	11.78	----	
O	05/18/1999	14:36	32.03	21.23	10.80	----	
O	09/21/1999	11:09	32.03	26.22	5.81	----	
O	12/06/1999	13:48	32.03	21.90	10.13	----	
O	02/16/2000	10:04	32.03	22.21	9.82	----	
O	05/23/2000	16:15	32.03	22.18	9.85	----	
O	08/29/2000	12:56	32.03	26.49	5.54	----	
O	11/09/2000	12:18	32.03	27.01	5.02	----	
O	02/12/2001	15:52	32.03	26.12	5.91	----	
O	06/04/2001	11:22	32.03	26.08	5.95	----	
O	08/16/2001	10:22	32.03	27.58	4.45	----	
O	11/28/2001	11:18	32.03	26.15	5.88	----	
O	02/27/2002	13:15	32.03	24.08	7.95	----	
O	06/27/2002	14:09	32.03	21.29	10.74	----	
O	08/26/2002	15:47	32.03	25.91	6.12	----	
O	11/13/2002	07:21	32.03	26.56	5.47	----	
O	02/11/2003	08:38	32.03	22.81	9.22	----	
O	05/08/2003	06:44	32.03	22.70	9.33	----	
O	08/27/2003	13:23	32.03	26.43	5.60	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
O	10/23/2003	12:02	32.03	27.11	4.92	----	
O	02/19/2004	12:15	32.03	23.71	8.32	----	
O	06/09/2004	07:32	32.03	22.76	9.27	----	
O	08/10/2004	08:23	32.03	26.51	5.52	----	
O	08/10/2004	10:02	32.03	26.52	5.51	----	
O	11/18/2004	07:33	32.03	26.13	5.90	----	
R	03/25/1997	11:36	30.47	15.56	14.91	----	
R	03/31/1997	08:43	30.47	14.85	15.62	----	
R	07/16/1997	07:00	30.47	20.37	10.10	----	
R	10/21/1997	15:56	30.47	22.54	7.93	----	
R	01/27/1998	10:57	30.47	18.98	11.49	----	
R	05/18/1998	17:15	30.47	18.73	11.74	----	
R	08/17/1998	10:12	30.47	23.93	6.54	----	
R	11/13/1998	09:35	30.47	25.17	5.30	----	
R	02/16/1999	13:05	30.47	18.79	11.68	----	
R	05/18/1999	14:37	30.47	19.64	10.83	----	
R	09/21/1999	11:15	30.47	24.53	5.94	----	
R	12/06/1999	13:46	30.47	20.33	10.14	----	
R	02/16/2000	10:12	30.47	20.65	9.82	----	
R	05/23/2000	16:17	30.47	20.64	9.83	----	
R	08/29/2000	12:58	30.47	24.97	5.50	----	
R	11/09/2000	12:20	30.47	25.47	5.00	----	
R	02/12/2001	15:54	30.47	24.46	6.01	----	
R	06/04/2001	11:36	30.47	24.53	5.94	----	
R	08/16/2001	10:35	30.47	26.02	4.45	----	
R	11/28/2001	11:19	30.47	24.57	5.90	----	
R	02/27/2002	13:17	30.47	22.50	7.97	----	
R	06/27/2002	14:08	30.47	19.75	10.72	----	
R	08/26/2002	15:58	30.47	24.38	6.09	----	
R	11/13/2002	07:22	30.47	25.04	5.43	----	
R	02/11/2003	08:41	30.47	21.22	9.25	----	
R	05/08/2003	06:46	30.47	21.14	9.33	----	
R	08/27/2003	13:25	30.47	24.91	5.56	----	
R	10/23/2003	11:56	30.47	25.60	4.87	----	
R	02/19/2004	12:05	30.47	22.15	8.32	----	
R	06/09/2004	07:30	30.47	21.21	9.26	----	
R	08/10/2004	08:21	30.47	24.99	5.48	----	
R	08/10/2004	10:00	30.47	24.99	5.48	----	
R	11/18/2004	07:34	30.47	24.61	5.86	----	
LW001D	03/31/1997	11:11	28.31	12.71	15.60	----	
LW001D	07/16/1997	08:12	28.31	17.65	10.66	----	
LW001D	10/21/1997	16:55	28.31	21.29	7.02	----	
LW001D	01/27/1998	13:07	28.31	17.06	11.25	----	
LW001D	05/18/1998	17:39	28.31	16.53	11.78	----	
LW001D	08/17/1998	10:30	28.31	21.82	6.49	----	
LW001D	11/13/1998	10:01	28.31	22.77	5.54	----	
LW001D	02/16/1999	13:21	28.31	17.30	11.01	----	
LW001D	05/18/1999	15:36	28.31	16.76	11.55	----	
LW001D	09/21/1999	12:12	28.31	22.91	5.40	----	
LW001D	12/06/1999	14:34	28.31	18.00	10.31	----	
LW001D	02/16/2000	10:49	28.31	18.16	10.15	----	
LW001D	05/23/2000	17:19	28.31	18.62	9.69	----	
LW001D	08/29/2000	13:59	28.31	22.81	5.50	----	
LW001D	11/09/2000	13:20	28.31	22.98	5.33	----	
LW001D	02/12/2001	15:35	28.31	22.23	6.08	----	
LW001D	06/04/2001	12:23	28.31	22.36	5.95	----	
LW001D	08/16/2001	11:38	28.31	23.73	4.58	----	
LW001D	11/28/2001	12:29	28.31	21.73	6.58	----	
LW001D	02/27/2002	14:17	28.31	20.31	8.00	----	
LW001D	06/27/2002	14:49	28.31	17.81	10.50	----	
LW001D	08/26/2002	17:12	28.31	22.85	5.46	----	
LW001D	11/13/2002	09:08	28.31	22.91	5.40	----	
LW001D	02/11/2003	10:27	28.31	21.11	7.20	----	
LW001D	05/08/2003	08:19	28.31	18.91	9.40	----	
LW001D	08/27/2003	14:50	28.31	22.40	5.91	----	
LW001D	10/23/2003	13:57	28.31	23.51	4.80	----	
LW001D	02/19/2004	14:30	28.31	19.91	8.40	----	
LW001D	06/09/2004	09:21	28.31	19.13	9.18	----	
LW001D	08/10/2004	08:45	28.31	23.30	5.01	----	
LW001D	08/10/2004	10:27	28.31	23.50	4.81	----	
LW001D	11/18/2004	08:27	28.31	22.69	5.62	----	
LW003D	03/31/1997	11:45	30.80	19.38	11.42	----	Time estimated

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW003D	07/16/1997	08:38	30.80	28.09	2.71	----	
LW003D	10/21/1997	17:07	30.80	23.36	7.44	----	
LW003D	01/27/1998	13:30	30.80	21.66	9.14	----	
LW003D	05/18/1998	17:35	30.80	19.21	11.59	----	
LW003D	08/17/1998	10:24	30.80	24.62	6.18	----	
LW003D	11/13/1998	09:03	30.80	25.56	5.24	----	
LW003D	02/16/1999	13:44	30.80	20.00	10.80	----	
LW003D	05/18/1999	15:58	30.80	19.42	11.38	----	Purged dry at 11:00
LW003D	09/21/1999	10:40	30.80	25.76	5.04	----	
LW003D	12/06/1999	14:45	30.80	20.69	10.11	----	
LW003D	02/16/2000	09:54	30.80	20.98	9.82	----	
LW003D	05/23/2000	14:40	30.80	21.16	9.64	----	Purged dry at 13:10
LW003D	08/29/2000	14:36	30.80	----	----	----	Well purged dry 8/28; sampled a.m. on 8/29
LW003D	11/09/2000	----	30.80	----	----	----	Well sampled 11/8/00 - water level not representative
LW003D	02/12/2001	15:11	30.80	24.85	5.95	----	
LW003D	06/04/2001	12:35	30.80	25.09	5.71	----	
LW003D	08/16/2001	11:47	30.80	26.43	4.37	----	
LW003D	11/28/2001	12:42	30.80	24.48	6.32	----	
LW003D	02/27/2002	14:20	30.80	23.13	7.67	----	
LW003D	06/27/2002	14:59	30.80	20.55	10.25	----	
LW003D	08/26/2002	17:03	30.80	25.63	5.17	----	
LW003D	11/13/2002	09:20	30.80	25.57	5.23	----	
LW003D	02/11/2003	10:40	30.80	24.03	6.77	----	
LW003D	05/08/2003	08:29	30.80	21.68	9.12	----	
LW003D	08/27/2003	15:04	30.80	25.10	5.70	----	
LW003D	10/23/2003	13:49	30.80	26.18	4.62	----	
LW003D	02/19/2004	14:21	30.80	22.65	8.15	----	
LW003D	06/09/2004	09:29	30.80	21.82	8.98	----	
LW003D	08/10/2004	08:39	30.80	25.95	4.85	----	
LW003D	08/10/2004	10:25	30.80	26.10	4.70	----	
LW003D	11/18/2004	08:24	30.80	25.42	5.38	----	
LW004D	03/31/1997	09:18	30.17	14.73	15.44	----	
LW004D	07/16/1997	07:42	30.17	19.43	10.74	----	
LW004D	10/21/1997	16:27	30.17	23.02	7.15	----	
LW004D	01/27/1998	11:56	30.17	18.84	11.33	----	
LW004D	05/18/1998	17:33	30.17	18.54	11.63	----	
LW004D	08/17/1998	10:18	30.17	23.81	6.36	----	
LW004D	11/13/1998	09:57	30.17	24.99	5.18	----	
LW004D	02/16/1999	13:17	30.17	18.79	11.38	----	
LW004D	05/18/1999	15:04	30.17	18.77	11.40	----	Completed sampling at 13:40
LW004D	09/21/1999	11:41	30.17	24.78	5.39	----	
LW004D	12/06/1999	14:18	30.17	20.21	9.96	----	
LW004D	02/16/2000	10:30	30.17	20.23	9.94	----	
LW004D	05/23/2000	16:54	30.17	20.55	9.62	----	
LW004D	08/29/2000	13:38	30.17	24.78	5.39	----	
LW004D	11/09/2000	12:52	30.17	25.19	4.98	----	
LW004D	02/12/2001	16:39	30.17	24.71	5.46	----	
LW004D	06/04/2001	12:07	30.17	24.66	5.51	----	
LW004D	08/16/2001	11:15	30.17	26.27	3.90	----	
LW004D	11/28/2001	12:04	30.17	24.41	5.76	----	
LW004D	02/27/2002	14:00	30.17	22.65	7.52	----	
LW004D	03/05/2002	11:36	30.17	22.94	7.23	----	
LW004D	04/05/2002	08:19	30.17	23.75	6.42	----	
LW004D	05/29/2002	00:00	30.17	20.48	9.69	----	
LW004D	06/27/2002	14:41	30.17	20.15	10.02	----	
LW004D	08/26/2002	16:32	30.17	25.02	5.15	----	
LW004D	11/13/2002	08:23	30.17	25.26	4.91	----	
LW004D	02/11/2003	09:32	30.17	23.08	7.09	----	
LW004D	05/08/2003	07:44	30.17	21.21	8.96	----	
LW004D	08/27/2003	14:01	30.17	24.78	5.39	----	
LW004D	10/23/2003	13:16	30.17	25.85	4.32	----	
LW004D	02/19/2004	13:45	30.17	22.14	8.03	----	
LW004D	06/09/2004	08:32	30.17	21.60	8.57	----	
LW004D	08/10/2004	08:24	30.17	25.68	4.49	----	
LW004D	08/10/2004	10:09	30.17	25.87	4.30	----	
LW004DR	11/24/2004	11:00	30.11	26.23	3.88	----	Replacement well installed 11/19/04
LW006D	03/25/1997	11:52	30.84	16.51	14.33	----	
LW006D	03/31/1997	09:05	30.84	15.53	15.31	----	Faint odor
LW006D	07/16/1997	07:30	30.84	20.74	10.10	----	
LW006D	10/21/1997	16:16	30.84	24.05	6.79	----	
LW006D	01/27/1998	11:38	30.84	19.94	10.90	----	
LW006D	05/18/1998	17:28	30.84	19.36	11.48	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW006D	08/17/1998	10:05	30.84	24.92	5.92	----	
LW006D	11/13/1998	09:50	30.84	25.94	4.90	----	
LW006D	02/16/1999	13:11	30.84	20.40	10.44	----	
LW006D	05/18/1999	14:53	30.84	19.81	11.03	----	
LW006D	09/21/1999	11:32	30.84	25.92	4.92	----	
LW006D	12/06/1999	14:09	30.84	20.86	9.98	----	
LW006D	02/16/2000	10:20	30.84	21.27	9.57	----	
LW006D	05/23/2000	16:35	30.84	21.64	9.20	----	
LW006D	08/29/2000	13:20	30.84	25.93	4.91	----	
LW006D	11/09/2000	12:35	30.84	26.21	4.63	----	
LW006D	02/12/2001	16:03	30.84	25.37	5.47	----	
LW006D	06/04/2001	11:42	30.84	25.30	5.54	----	
LW006D	08/16/2001	10:54	30.84	26.72	4.12	----	
LW006D	11/28/2001	11:46	30.84	24.92	5.92	----	
LW006D	02/27/2002	13:35	30.84	23.62	7.22	----	
LW006D	06/27/2002	14:19	30.84	20.68	10.16	----	
LW006D	08/26/2002	16:04	30.84	25.79	5.05	----	
LW006D	11/13/2002	07:42	30.84	25.82	5.02	----	
LW006D	02/11/2003	09:01	30.84	24.08	6.76	----	
LW006D	05/08/2003	07:01	30.84	21.97	8.87	----	
LW006D	08/27/2003	13:40	30.84	25.37	5.47	----	
LW006D	10/23/2003	12:31	30.84	26.47	4.37	----	
LW006D	02/19/2004	12:37	30.84	23.00	7.84	----	
LW006D	06/09/2004	08:00	30.84	21.90	8.94	----	
LW006D	08/10/2004	08:42	30.84	26.22	4.62	----	
LW006D	08/10/2004	10:20	30.84	26.43	4.41	----	
LW006D	11/18/2004	07:51	30.84	25.61	5.23	----	
LW009D	05/18/1999	14:56	30.98	20.02	10.96	----	
LW009D	09/21/1999	11:34	30.98	25.23	5.75	----	
LW009D	12/06/1999	14:11	30.98	21.04	9.94	----	
LW009D	02/16/2000	10:23	30.98	21.17	9.81	----	
LW009D	05/23/2000	16:39	30.98	21.15	9.83	----	
LW009D	08/29/2000	13:27	30.98	25.36	5.62	----	
LW009D	11/09/2000	12:43	30.98	25.96	5.02	----	
LW009D	02/12/2001	16:11	30.98	25.13	5.85	----	
LW009D	06/04/2001	11:49	30.98	25.15	5.83	----	
LW009D	08/16/2001	11:02	30.98	26.57	4.41	----	
LW009D	11/28/2001	11:53	30.98	25.40	5.58	----	
LW009D	02/27/2002	13:47	30.98	22.97	8.01	----	
LW009D	06/27/2002	14:25	30.98	20.38	10.60	----	
LW009D	08/26/2002	16:11	30.98	24.90	6.08	----	
LW009D	11/13/2002	07:48	30.98	25.73	5.25	----	
LW009D	02/11/2003	09:07	30.98	22.03	8.95	----	
LW009D	05/08/2003	07:12	30.98	21.65	9.33	----	
LW009D	08/27/2003	13:47	30.98	25.50	5.48	----	
LW009D	10/23/2003	12:50	30.98	26.22	4.76	----	
LW009D	02/19/2004	13:02	30.98	22.55	8.43	----	
LW009D	06/09/2004	08:11	30.98	21.91	9.07	----	
LW009D	08/10/2004	08:14	30.98	25.49	5.49	----	
LW009D	08/10/2004	09:59	30.98	25.54	5.44	----	
LW009D	11/18/2004	07:44	30.98	25.36	5.62	----	
LW010D	05/18/1999	15:00	31.12	19.82	11.30	----	
LW010D	09/21/1999	11:37	31.12	25.81	5.31	----	
LW010D	12/06/1999	14:15	31.12	21.18	9.94	----	
LW010D	02/16/2000	10:27	31.12	21.20	9.92	----	
LW010D	05/23/2000	16:42	31.12	21.51	9.61	----	
LW010D	08/29/2000	13:29	31.12	25.86	5.26	----	
LW010D	11/09/2000	12:46	31.12	26.26	4.86	----	
LW010D	02/12/2001	16:15	31.12	25.63	5.49	----	
LW010D	06/04/2001	11:52	31.12	25.62	5.50	----	
LW010D	08/16/2001	11:04	31.12	27.16	3.96	----	
LW010D	11/28/2001	11:55	31.12	25.46	5.66	----	
LW010D	02/27/2002	13:49	31.12	23.58	7.54	----	
LW010D	06/27/2002	14:29	31.12	21.03	10.09	----	
LW010D	08/26/2002	16:17	31.12	25.91	5.21	----	
LW010D	11/13/2002	08:01	31.12	26.17	4.95	----	
LW010D	02/11/2003	09:21	31.12	23.83	7.29	----	
LW010D	05/08/2003	07:33	31.12	22.10	9.02	----	
LW010D	08/27/2003	13:53	31.12	25.74	5.38	----	
LW010D	10/23/2003	13:10	31.12	26.79	4.33	----	
LW010D	02/19/2004	13:25	31.12	22.98	8.14	----	
LW010D	06/09/2004	08:23	31.12	22.46	8.66	----	
LW010D	08/10/2004	08:16	31.12	26.52	4.60	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW010D	08/10/2004	10:02	31.12	26.70	4.42	----	
LW010D	11/18/2004	07:51	31.12	26.08	5.04	----	
LW011D	05/18/1999	15:09	29.04	18.59	10.45	----	
LW011D	09/21/1999	11:50	29.04	20.76	8.28	----	
LW011D	12/06/1999	15:06	29.04	21.81	7.23	----	
LW011D	02/16/2000	11:02	29.04	20.35	8.69	----	
LW011D	05/23/2000	17:37	29.04	19.50	9.54	----	
LW011D	08/29/2000	14:54	29.04	----	----	----	Well purged dry 8/28; sampled a.m. on 8/29
LW011D	11/09/2000	----	29.04	----	----	----	Well sampled 11/8/00 - water level not representative
LW011D	02/12/2001	15:16	29.04	23.14	5.90	----	
LW011D	06/04/2001	13:11	29.04	23.35	5.69	----	
LW011D	08/16/2001	11:25	29.04	26.94	2.10	----	
LW011D	11/28/2001	12:53	29.04	24.54	4.50	----	
LW011D	02/27/2002	14:57	29.04	21.80	7.24	----	
LW011D	06/27/2002	15:11	29.04	18.84	10.20	----	
LW011D	08/26/2002	16:47	29.04	22.71	6.33	----	
LW011D	11/13/2002	08:55	29.04	23.87	5.17	----	
LW011D	02/11/2003	10:04	29.04	21.79	7.25	----	
LW011D	05/08/2003	08:08	29.04	19.28	9.76	----	
LW011D	08/27/2003	14:34	29.04	23.35	5.69	----	
LW011D	10/23/2003	14:11	29.04	23.98	5.06	----	
LW011D	02/19/2004	14:05	29.04	21.08	7.96	----	
LW011D	06/09/2004	08:55	29.04	20.04	9.00	----	
LW011D	08/10/2004	08:35	29.04	24.17	4.87	----	
LW011D	08/10/2004	10:20	29.04	24.46	4.58	----	
LW011D	11/18/2004	08:11	29.04	23.67	5.37	----	
LW012D1	05/18/1999	15:13	30.02	18.45	11.57	----	
LW012D1	09/21/1999	11:54	30.02	24.44	5.58	----	
LW012D1	12/06/1999	14:21	30.02	19.72	10.30	----	
LW012D1	02/16/2000	10:35	30.02	19.89	10.13	----	
LW012D1	05/23/2000	17:00	30.02	20.23	9.79	----	
LW012D1	08/29/2000	13:45	30.02	24.38	5.64	----	
LW012D1	11/09/2000	13:00	30.02	24.66	5.36	----	
LW012D1	02/12/2001	15:57	30.02	23.92	6.10	----	
LW012D1	06/04/2001	12:32	30.02	23.99	6.03	----	
LW012D1	08/16/2001	11:42	30.02	25.39	4.63	----	
LW012D1	11/28/2001	12:38	30.02	23.33	6.69	----	
LW012D1	02/27/2002	14:28	30.02	21.88	8.14	----	
LW012D1	06/27/2002	14:57	30.02	19.58	10.44	----	
LW012D1							Abandoned August 2003
LW012D2	05/18/1999	15:14	29.24	18.23	11.01	----	
LW012D2	09/21/1999	11:53	29.24	24.69	4.55	----	
LW012D2	12/06/1999	14:22	29.24	19.40	9.84	----	
LW012D2	02/16/2000	10:36	29.24	19.90	9.34	----	
LW012D2	05/23/2000	16:59	29.24	20.38	8.86	----	
LW012D2	08/29/2000	13:44	29.24	24.68	4.56	----	
LW012D2	11/09/2000	13:01	29.24	24.56	4.68	----	
LW012D2	02/12/2001	15:56	29.24	23.88	5.36	----	
LW012D2	06/04/2001	12:31	29.24	24.10	5.14	----	
LW012D2	08/16/2001	11:43	29.24	25.43	3.81	----	
LW012D2	11/28/2001	12:39	29.24	23.17	6.07	----	
LW012D2	02/27/2002	14:29	29.24	22.38	6.86	----	
LW012D2	06/27/2002	14:58	29.24	19.44	9.80	----	
LW012D2							Abandoned August 2003
LW014D	05/23/2000	16:50	30.54	21.26	9.28	----	
LW014D	08/29/2000	13:35	30.54	25.68	4.86	----	
LW014D	11/09/2000	12:49	30.54	25.90	4.64	----	
LW014D	02/12/2001	16:20	30.54	25.33	5.21	----	
LW014D	06/04/2001	12:00	30.54	25.37	5.17	----	
LW014D	08/16/2001	11:08	30.54	27.00	3.54	----	
LW014D	11/28/2001	11:56	30.54	25.03	5.51	----	
LW014D	02/27/2002	13:55	30.54	23.57	6.97	----	
LW014D	06/27/2002	14:33	30.54	20.70	9.84	----	
LW014D	08/26/2002	16:26	30.54	25.90	4.64	----	
LW014D	11/13/2002	08:07	30.54	25.76	4.78	----	
LW014D	02/11/2003	09:27	30.54	24.33	6.21	----	
LW014D	05/08/2003	07:38	30.54	21.92	8.62	----	
LW014D	08/27/2003	13:56	30.54	25.32	5.22	----	
LW014D	10/23/2003	13:13	30.54	26.56	3.98	----	
LW014D	02/19/2004	13:30	30.54	22.86	7.68	----	
LW014D	06/09/2004	08:27	30.54	22.11	8.43	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW014D	08/10/2004	08:20	30.54	26.29	4.25	----	
LW014D	08/10/2004	10:05	30.54	26.58	3.96	----	
LW014D	11/18/2004	07:57	30.54	25.74	4.80	----	
LW015D	05/23/2000	16:49	30.85	21.26	9.59	----	
LW015D	08/29/2000	13:34	30.85	25.54	5.31	----	
LW015D	11/09/2000	12:48	30.85	25.98	4.87	----	
LW015D	02/12/2001	16:18	30.85	25.43	5.42	----	
LW015D	06/04/2001	11:59	30.85	25.41	5.44	----	
LW015D	08/16/2001	11:07	30.85	27.05	3.80	----	
LW015D	11/28/2001	11:55	30.85	25.29	5.56	----	
LW015D	02/27/2002	13:52	30.85	23.42	7.43	----	
LW015D	06/27/2002	14:32	30.85	20.91	9.94	----	
LW015D	08/26/2002	16:25	30.85	25.77	5.08	----	
LW015D	11/13/2002	08:05	30.85	26.04	4.81	----	
LW015D	02/11/2003	09:23	30.85	23.65	7.20	----	
LW015D	05/08/2003	07:37	30.85	21.95	8.90	----	
LW015D	08/27/2003	13:55	30.85	25.58	5.27	----	
LW015D	10/23/2003	13:12	30.85	26.61	4.24	----	
LW015D	02/19/2004	13:30	30.85	22.83	8.02	----	
LW015D	06/09/2004	08:25	30.85	22.36	8.49	----	
LW015D	08/10/2004	08:19	30.85	26.43	4.42	----	
LW015D	08/10/2004	10:04	30.85	26.61	4.24	----	
LW015D	11/18/2004	07:55	30.85	25.98	4.87	----	
LW016D	05/23/2000	16:48	28.40	18.79	9.61	----	
LW016D	08/29/2000	13:32	28.40	23.07	5.33	----	
LW016D	11/09/2000	12:47	28.40	23.59	4.81	----	
LW016D	02/12/2001	16:17	28.40	22.94	5.46	----	
LW016D	06/04/2001	11:57	28.40	23.00	5.40	----	
LW016D	08/16/2001	11:05	28.40	24.43	3.97	----	
LW016D	11/28/2001	11:57	28.40	22.87	5.53	----	
LW016D	02/27/2002	13:54	28.40	20.94	7.46	----	
LW016D	06/27/2002	14:31	28.40	18.46	9.94	----	
LW016D	08/26/2002	16:23	28.40	23.24	5.16	----	
LW016D	11/13/2002	08:08	28.40	23.45	4.95	----	
LW016D	02/11/2003	09:25	28.40	21.14	7.26	----	
LW016D	05/08/2003	07:36	28.40	19.65	8.75	----	
LW016D	08/27/2003	13:54	28.40	23.08	5.32	----	
LW016D	10/23/2003	13:11	28.40	24.10	4.30	----	
LW016D	02/19/2004	13:31	28.40	20.30	8.10	----	
LW016D	06/09/2004	08:26	28.40	19.91	8.49	----	
LW016D	08/10/2004	08:17	28.40	23.88	4.52	----	
LW016D	08/10/2004	10:03	28.40	24.08	4.32	----	
LW016D	11/18/2004	07:54	28.40	23.41	4.99	----	
LW017D	08/29/2000	13:21	27.82	22.96	4.86	----	
LW017D	11/09/2000	12:36	27.82	23.17	4.65	----	
LW017D	02/12/2001	16:04	27.82	22.44	5.38	----	
LW017D	06/04/2001	11:44	27.82	22.42	5.40	----	
LW017D	08/16/2001	10:55	27.82	23.80	4.02	----	
LW017D	11/28/2001	11:50	27.82	22.00	5.82	----	
LW017D	02/27/2002	13:37	27.82	19.82	8.00	----	
LW017D	03/05/2002	11:30	27.82	20.46	7.36	----	
LW017D	04/05/2002	08:15	27.82	21.34	6.48	----	
LW017D	05/29/2002	00:00	27.82	17.90	9.92	----	
LW017D	06/27/2002	14:20	27.82	17.64	10.18	----	
LW017D	08/26/2002	16:07	27.82	22.67	5.15	----	
LW017D	11/13/2002	07:45	27.82	22.80	5.02	----	
LW017D	02/11/2003	09:03	27.82	20.79	7.03	----	
LW017D	05/08/2003	07:05	27.82	18.82	9.00	----	
LW017D	08/27/2003	13:43	27.82	22.38	5.44	----	
LW017D	10/23/2003	12:34	27.82	23.46	4.36	----	
LW017D	02/19/2004	12:52	27.82	19.82	8.00	----	
LW017D	06/09/2004	08:04	27.82	19.00	8.82	----	
LW017D	08/10/2004	08:44	27.82	23.21	4.61	----	
LW017D	08/10/2004	10:23	27.82	23.41	4.41	----	
LW017D	11/18/2004	08:04	27.82	22.69	5.13	----	
LW018D	08/29/2000	13:25	27.82	22.79	5.03	----	
LW018D	11/09/2000	12:40	27.82	22.91	4.91	----	
LW018D	02/12/2001	16:10	27.82	22.56	5.26	----	
LW018D	06/04/2001	11:47	27.82	22.28	5.54	----	
LW018D	08/16/2001	11:00	27.82	23.81	4.01	----	
LW018D	11/28/2001	11:51	27.82	22.00	5.82	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW018D	02/27/2002	13:43	27.82	20.44	7.38	----	
LW018D	06/27/2002	14:23	27.82	17.72	10.10	----	
LW018D	08/26/2002	16:13	27.82	21.90	5.92	----	
LW018D	11/13/2002	07:51	27.82	22.71	5.11	----	
LW018D	02/11/2003	09:05	27.82	20.95	6.87	----	
LW018D	05/08/2003	07:10	27.82	18.75	9.07	----	
LW018D	08/27/2003	13:45	27.82	22.41	5.41	----	
LW018D	10/23/2003	12:45	27.82	23.46	4.36	----	
LW018D	02/19/2004	13:10	27.82	19.74	8.08	----	
LW018D	06/09/2004	08:07	27.82	19.45	8.37	----	
LW018D	08/10/2004	08:11	27.82	23.26	4.56	----	
LW018D	08/10/2004	09:54	27.82	23.46	4.36	----	
LW018D	11/18/2004	08:02	27.82	22.87	4.95	----	
LW020D	10/23/2003	12:15	29.51	24.86	4.65	----	
LW020D	02/19/2004	14:46	29.51	21.00	8.51	----	
LW020D	06/09/2004	07:48	29.51	20.45	9.06	----	
LW020D	08/10/2004	08:32	29.51	24.70	4.81	----	
LW020D	08/10/2004	10:08	29.51	24.90	4.61	----	
LW020D	11/18/2004	07:48	29.51	24.17	5.34	----	
LW022D	10/23/2003	11:58	32.56	27.72	4.84	----	
LW022D	02/19/2004	12:14	32.56	24.44	8.12	----	
LW022D	06/09/2004	07:22	32.56	23.35	9.21	----	
LW022D	08/10/2004	08:16	32.56	27.20	5.36	----	
LW022D	08/10/2004	09:55	32.56	27.21	5.35	----	
LW022D	11/18/2004	07:24	32.56	26.69	5.87	----	
LW023D	10/23/2003	12:00	31.41	26.56	4.85	----	
LW023D	02/19/2004	12:13	31.41	23.31	8.10	----	
LW023D	06/09/2004	07:21	31.41	22.24	9.17	----	
LW023D	08/10/2004	08:13	31.41	26.08	5.33	----	
LW023D	08/10/2004	09:53	31.41	26.09	5.32	----	
LW023D	11/18/2004	07:22	31.41	25.58	5.83	----	
LW024D	10/23/2003	12:23	33.47	28.61	4.86	----	
LW024D	02/19/2004	12:40	33.47	25.28	8.19	----	
LW024D	06/09/2004	07:57	33.47	24.30	9.17	----	
LW024D	08/10/2004	08:36	33.47	28.02	5.45	----	
LW024D	08/10/2004	10:15	33.47	28.04	5.43	----	
LW024D	11/18/2004	07:54	33.47	27.65	5.82	----	
LW025D	10/23/2003	12:28	35.38	30.50	4.88	----	
LW025D	02/19/2004	12:38	35.38	27.25	8.13	----	
LW025D	06/09/2004	07:59	35.38	26.26	9.12	----	
LW025D	08/10/2004	08:40	35.38	29.94	5.44	----	
LW025D	08/10/2004	10:17	35.38	29.96	5.42	----	
LW025D	11/18/2004	07:48	35.38	29.59	5.79	----	
LW026D	10/23/2003	12:09	31.49	27.17	4.32	----	
LW026D	02/19/2004	12:22	31.49	23.64	7.85	----	
LW026D	06/09/2004	07:37	31.49	22.67	8.82	----	
LW026D	08/10/2004	08:26	31.49	27.03	4.46	----	
LW026D	08/10/2004	10:05	31.49	27.31	4.18	----	
LW026D	11/18/2004	07:36	31.49	26.49	5.00	----	
LW027D	10/23/2003	12:21	29.71	25.47	4.24	----	
LW027D	02/19/2004	12:43	29.71	21.96	7.75	----	
LW027D	06/09/2004	07:38	29.71	20.97	8.74	----	
LW027D	08/10/2004	08:28	29.71	25.34	4.37	----	
LW027D	08/10/2004	10:12	29.71	25.65	4.06	----	
LW027D	11/18/2004	07:38	29.71	24.78	4.93	----	
LW029D	10/23/2003	14:40	31.12	26.45	4.67	----	
LW029D	02/19/2004	15:31	31.12	22.55	8.57	----	
LW029D	06/09/2004	09:44	31.12	22.16	8.96	----	
LW029D	08/10/2004	08:28	31.12	26.28	4.84	----	
LW029D	08/10/2004	10:12	31.12	26.52	4.60	----	
LW029D	11/18/2004	08:13	31.12	25.80	5.32	----	
LW030D	10/23/2003	14:52	30.06	25.58	4.48	----	
LW030D	02/19/2004	15:33	30.06	21.55	8.51	----	
LW030D	06/09/2004	09:47	30.06	21.21	8.85	----	
LW030D	08/10/2004	08:30	30.06	25.58	4.48	----	
LW030D	08/10/2004	10:14	30.06	25.87	4.19	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
LW030D	11/18/2004	08:15	30.06	25.01	5.05	----	
LW032D	10/23/2003	14:33	30.86	25.23	5.63	----	
LW032D	02/19/2004	15:28	30.86	21.95	8.91	----	
LW032D	06/09/2004	09:59	30.86	21.41	9.45	----	
LW032D	08/10/2004	08:33	30.86	25.24	5.62	----	
LW032D	08/10/2004	10:16	30.86	25.42	5.44	----	
LW032D	11/18/2004	08:18	30.86	24.63	6.23	----	
LW035D	10/23/2003	11:48	33.19	28.33	4.86	----	
LW035D	02/19/2004	12:34	33.19	24.86	8.33	----	
LW035D	06/09/2004	07:24	33.19	23.88	9.31	----	
LW035D	08/10/2004	08:19	33.19	27.62	5.57	----	
LW035D	08/10/2004	09:57	33.19	27.65	5.54	----	
LW035D	11/18/2004	07:27	33.19	27.31	5.88	----	
LW036D	11/18/2004	07:25	11.30	5.59	5.71	----	
LW037D	11/18/2004	07:30	10.84	5.35	5.49	----	
LW038D	11/18/2004	07:34	10.21	5.22	4.99	----	
LW039D	11/18/2004	07:39	9.35	4.03	5.32	----	
LW040D			34.28				
LW045D	11/18/2004	07:29	33.36	27.53	5.83	----	
OX008D	10/23/2003	13:48	30.84	26.12	4.72	----	
OX008D	02/19/2004	14:20	30.84	22.52	8.32	----	
OX008D	06/09/2004	09:10	30.84	21.77	9.07	----	
OX008D	08/10/2004	08:37	30.84	25.90	4.94	----	
OX008D	08/10/2004	10:23	30.84	26.09	4.75	----	
OX008D	11/18/2004	08:25	30.84	25.25	5.59	----	
RW2	05/18/1999	15:02	30.68	19.50	11.18	----	
RW2	09/21/1999	11:40	30.68	25.75	4.93	----	
RW2	12/06/1999	14:17	30.68	20.77	9.91	----	
RW2	02/16/2000	10:29	30.68	20.99	9.69	----	
RW2	05/23/2000	16:52	30.68	21.37	9.31	----	
RW2	08/29/2000	13:36	30.68	25.36	5.32	----	
RW2	11/09/2000	12:50	30.68	25.83	4.85	----	Groundwater interim action pumping began 10/5/00 in the lower zone at this well. Pump not running at time of measurement.
RW2	02/12/2001	16:37	30.68	26.40	4.28	----	
RW2	06/04/2001	12:05	30.68	26.26	4.42	----	
RW2	08/16/2001	11:11	30.68	28.98	1.70	----	
RW2	11/28/2001	12:02	30.68	26.86	3.82	----	
RW2	02/27/2002	13:57	30.68	26.02	4.66	----	
RW2	06/27/2002	14:35	30.68	23.68	7.00	----	
RW2	08/26/2002	16:29	30.68	28.26	2.42	----	
RW2	11/13/2002	08:20	30.68	28.50	2.18	----	
RW2	02/11/2003	09:29	30.68	26.96	3.72	----	
RW2	05/07/2003	17:30	30.68	24.80	5.88	----	Date of measurement is day of sampling
RW2	08/27/2003	13:57	30.68	27.91	2.77	----	
RW2	10/23/2003	13:30	30.68	28.73	1.95	----	
RW2	02/19/2004	13:43	30.68	25.53	5.15	----	
RW2	06/10/2004	08:13	30.68	25.19	5.49	----	
RW2	08/10/2004	08:23	30.68	29.55	1.13	----	
RW2	08/10/2004	10:07	30.68	29.74	0.94	----	
RW2	11/18/2004	08:05	30.68	29.50	1.18	----	
RIVER_GAUGE	08/11/1993	12:57	28.13	24.90	3.23	----	
RIVER_GAUGE	10/26/1993	13:17	28.13	25.27	2.86	----	
RIVER_GAUGE	11/17/1993	13:21	28.13	24.18	3.95	----	
RIVER_GAUGE	12/17/1993	12:46	28.13	22.48	5.65	----	
RIVER_GAUGE	01/17/1994	12:58	28.13	22.90	5.23	----	
RIVER_GAUGE	02/18/1994	14:10	28.13	22.30	5.83	----	
RIVER_GAUGE	03/18/1994	12:48	28.13	21.70	6.43	----	
RIVER_GAUGE	04/18/1994	14:34	28.13	23.50	4.63	----	
RIVER_GAUGE	05/18/1994	15:14	28.13	21.80	6.33	----	
RIVER_GAUGE	06/17/1994	14:45	28.13	21.32	6.81	----	
RIVER_GAUGE	07/19/1994	09:10	28.13	23.25	4.88	----	
RIVER_GAUGE	08/17/1994	07:26	28.13	24.00	4.13	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
RIVER_GAUGE	09/16/1994	07:30	28.13	24.66	3.47	----	
RIVER_GAUGE	10/17/1994	08:58	28.13	24.10	4.03	----	
RIVER_GAUGE	11/21/1994	11:43	28.13	23.20	4.93	----	
RIVER_GAUGE	12/19/1994	10:58	28.13	19.95	8.18	----	
RIVER_GAUGE	01/18/1995	11:04	28.13	16.70	11.43	----	
RIVER_GAUGE	02/21/1995	13:14	28.13	14.65	13.48	----	
RIVER_GAUGE	03/21/1995	12:58	28.13	18.90	9.23	----	
RIVER_GAUGE	04/19/1995	12:37	28.13	19.80	8.33	----	
RIVER_GAUGE	05/19/1995	13:22	28.13	17.40	10.73	----	
RIVER_GAUGE	07/17/1995	13:48	28.13	22.00	6.13	----	
RIVER_GAUGE	08/22/1995	07:45	28.13	23.24	4.89	----	
RIVER_GAUGE	09/22/1995	08:19	28.13	24.26	3.87	----	
RIVER_GAUGE	11/20/1995	07:50	28.13	20.20	7.93	----	
RIVER_GAUGE	12/01/1995	08:23	28.13	8.45	19.68	----	
RIVER_GAUGE	12/19/1995	07:11	28.13	14.10	14.03	----	
RIVER_GAUGE	01/19/1996	08:29	28.13	14.06	14.07	----	
RIVER_GAUGE	02/20/1996	10:36	28.13	8.00	20.13	----	
RIVER_GAUGE	03/19/1996	09:15	28.13	15.95	12.18	----	
RIVER_GAUGE	04/19/1996	11:45	28.13	13.95	14.18	----	
RIVER_GAUGE	07/22/1996	14:18	28.13	22.00	6.13	----	
RIVER_GAUGE	07/22/1996	15:05	28.13	22.20	5.93	----	
RIVER_GAUGE	08/20/1996	14:09	28.13	22.80	5.33	----	
RIVER_GAUGE	08/20/1996	15:10	28.13	23.00	5.13	----	
RIVER_GAUGE	09/24/1996	07:55	28.13	23.41	4.72	----	
RIVER_GAUGE	09/24/1996	10:15	28.13	24.25	3.88	----	
RIVER_GAUGE	10/28/1996	10:53	28.13	22.95	5.18	----	
RIVER_GAUGE	10/28/1996	12:12	28.13	23.21	4.92	----	
RIVER_GAUGE	12/13/1996	12:09	28.13	14.50	13.63	----	
RIVER_GAUGE	03/25/1997	11:33	28.13	14.60	13.53	----	
RIVER_GAUGE	03/31/1997		28.13	----	----	----	Locked
RIVER_GAUGE	07/16/1997	06:55	28.13	18.73	9.40	----	
RIVER_GAUGE	07/16/1997	07:55	28.13	18.84	9.29	----	
RIVER_GAUGE	07/16/1997	09:14	28.13	18.92	9.21	----	
RIVER_GAUGE	10/21/1997	15:52	28.13	23.38	4.75	----	
RIVER_GAUGE	10/21/1997	16:11	28.13	23.44	4.69	----	
RIVER_GAUGE	10/21/1997	17:55	28.13	23.59	4.54	----	
RIVER_GAUGE	01/27/1998	10:46	28.13	18.20	9.93	----	
RIVER_GAUGE	01/27/1998	12:25	28.13	18.31	9.82	----	
RIVER_GAUGE	01/27/1998	13:56	28.13	17.89	10.24	----	
RIVER_GAUGE	05/18/1998	17:12	28.13	16.97	11.16	----	
RIVER_GAUGE	05/18/1998	17:45	28.13	17.15	10.98	----	
RIVER_GAUGE	08/17/1998	09:58	28.13	23.98	4.15	----	
RIVER_GAUGE	08/17/1998	10:34	28.13	24.15	3.98	----	
RIVER_GAUGE	11/13/1998	09:30	28.13	24.64	3.49	----	
RIVER_GAUGE	11/13/1998	10:05	28.13	24.45	3.68	----	
RIVER_GAUGE	02/16/1999	12:40	28.13	19.36	8.77	----	
RIVER_GAUGE	02/16/1999	13:27	28.13	19.43	8.70	----	
RIVER_GAUGE	05/18/1999	14:33	28.13	17.24	10.89	----	
RIVER_GAUGE	05/18/1999	15:19	28.13	17.30	10.83	----	
RIVER_GAUGE	09/21/1999	11:10	28.13	24.94	3.19	----	
RIVER_GAUGE	09/21/1999	11:59	28.13	25.03	3.10	----	
RIVER_GAUGE	12/06/1999	13:43	28.13	18.24	9.89	----	
RIVER_GAUGE	12/06/1999	14:25	28.13	18.06	10.07	----	
RIVER_GAUGE	02/16/2000	10:03	28.13	19.18	8.95	----	
RIVER_GAUGE	02/16/2000	10:41	28.13	19.07	9.06	----	
RIVER_GAUGE	05/23/2000	16:12	28.13	19.80	8.33	----	
RIVER_GAUGE	05/23/2000	17:04	28.13	19.94	8.19	----	
RIVER_GAUGE	08/29/2000	12:54	28.13	24.63	3.50	----	
RIVER_GAUGE	08/29/2000	13:49	28.13	24.91	3.22	----	
RIVER_GAUGE	11/09/2000	12:19	28.13	24.26	3.87	----	
RIVER_GAUGE	11/09/2000	13:10	28.13	23.67	4.46	----	
RIVER_GAUGE	02/12/2001	15:45	28.13	23.75	4.38	----	
RIVER_GAUGE	02/12/2001	16:43	28.13	24.00	4.13	----	
RIVER_GAUGE	06/04/2001	11:20	28.13	23.62	4.51	----	
RIVER_GAUGE	06/04/2001	12:15	28.13	23.79	4.34	----	
RIVER_GAUGE	08/16/2001	10:20	28.13	24.83	3.30	----	
RIVER_GAUGE	08/16/2001	11:29	28.13	25.23	2.90	----	
RIVER_GAUGE	11/28/2001	11:16	28.13	22.50	5.63	----	
RIVER_GAUGE	11/28/2001	12:18	28.13	23.13	5.00	----	
RIVER_GAUGE	02/27/2002	13:11	28.13	22.24	5.89	----	
RIVER_GAUGE	02/27/2002	14:12	28.13	22.27	5.86	----	
RIVER_GAUGE	03/05/2002	11:25	28.13	21.42	6.71	----	
RIVER_GAUGE	04/05/2002	08:00	28.13	23.10	5.03	----	
RIVER_GAUGE	05/29/2002	14:07	28.13	17.31	10.82	----	
RIVER_GAUGE	06/27/2002	14:07	28.13	18.31	9.82	----	

TABLE B-1
GROUNDWATER LEVEL MEASUREMENTS
QUARTERLY SAMPLING EVENTS, MARCH 1997 - NOVEMBER 2004
TIME OIL NORTHWEST TERMINAL

Well	Date	Time	Reference Elevation (ft) (a)	DTW (ft) (b)	GW Elevation (ft) (c)	LNAPL Thickness (ft)	NOTES
RIVER_GAUGE	06/27/2002	14:43	28.13	18.36	9.77	----	
RIVER_GAUGE	08/26/2002	15:45	28.13	24.83	3.30	----	
RIVER_GAUGE	08/26/2002	16:13	28.13	24.85	3.28	----	
RIVER_GAUGE	11/13/2002	07:19	28.13	24.10	4.03	----	
RIVER_GAUGE	11/13/2002	07:54	28.13	24.21	3.92	----	
RIVER_GAUGE	02/11/2003	08:34	28.13	23.70	4.43	----	
RIVER_GAUGE	02/11/2003	09:14	28.13	23.43	4.70	----	
RIVER_GAUGE	05/08/2003	06:40	28.13	20.02	8.11	----	
RIVER_GAUGE	05/08/2003	07:17	28.13	20.00	8.13	----	
RIVER_GAUGE	08/27/2003	13:18	28.13	23.36	4.77	----	
RIVER_GAUGE	08/27/2003	14:15	28.13	23.66	4.47	----	
RIVER_GAUGE	10/23/2003	11:46	28.13	25.00	3.13	----	
RIVER_GAUGE	10/23/2003	13:35	28.13	24.94	3.19	----	
RIVER_GAUGE	02/19/2004	12:10	28.13	21.14	6.99	----	
RIVER_GAUGE	02/19/2004	13:20	28.13	20.89	7.24	----	
RIVER_GAUGE	06/09/2004	07:18	28.13	19.79	8.34	----	
RIVER_GAUGE	06/09/2004	08:16	28.13	19.78	8.35	----	
RIVER_GAUGE	08/10/2004	08:10	28.13	24.85	3.28	----	
RIVER_GAUGE	08/10/2004	08:52	28.13	25.11	3.02	----	
RIVER_GAUGE	08/10/2004	09:51	28.13	25.43	2.70	----	
RIVER_GAUGE	08/10/2004	10:35	28.13	25.54	2.59	----	
RIVER_GAUGE	11/18/2004	07:20	28.13	24.25	3.88	----	
RIVER_GAUGE	11/18/2004	08:30	28.13	24.65	3.48	----	

NM = Not measured.

NA = Not available.

-- = No measurable product or odor observed.

* Well Point

(a) Reference Elevation (Ref. Elev) is the north side of the top of the 1.25-, 2- or 4-inch well casing, reference elevation surveys were conducted by Zarosinski-Tatone Engineers, Inc., Portland, Oregon. For the river gauge, the reference elevation was measured at a marked location on the south side of the dock on the Willamette River.

(b) Depth to water (DTW) measured from surveyed reference elevation [see note (1)].

(c) Where LNAPL thickness measured, groundwater elevation adjusted to account for the presence of LNAPL in the well using the method in "Estimation of Free Hydrocarbon Volume from Fluid Levels in Monitoring Wells" [Lenhard and Parker 1990; Groundwater 28(1):57-67].

Detected Constituents – Soil Data Summary Tables

TABLE C-1a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
	Risk-Based Concentrations					Soil Ingestion, Dermal Contact, and Inhalation		Volatilization to	Leaching to	LW4D (0-0.5) R950A 03/12/97	LW6D (0-0.5) R950I 03/13/97	G2 (0-0.5) 0108151-01 8/20/2001	G3 (0-0.5) 0108151-03 8/20/2001	G8 (0-0.5) 0108151-13 8/20/2001	G9 (0-0.5) 0108189-08 8/24/2001	G12 (0-0.5) 0108151-18 8/20/2001	G13 (0-0.5) 0108172-01 8/21/2001	G14 (0-0.5) 0108172-05 8/21/2001
	Background					Occupational Worker		Occupational	Occupational									
	EPA Region 9 PRGs	Oregon SLVs				Construction Worker	Excavation Worker											
	Industrial	DAF=20	Plants	Mammals	Birds	Inverts												
VOLATILES (mg/kg)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	--	1500	1400	40,000	790	55	NA	NA	0.002 U	0.001 U	0.001 U	0.001 U
1,2-Dibromoethane	0.073	--	--	--	--	--	--	0.033	0.25	7.1	17	0.000059	NA	NA	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	--	1500	1400	40,000	--	12	NA	NA	0.002 U	0.001 U	0.001 U	0.001 U
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	--	NA	NA	0.005 U	0.005 U	0.005 U	0.005 U
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	--	NA	NA	0.002 U	0.001 U	0.001 U	0.001 U
Acetone	54,000	16	--	1250	--	--	--	--	--	--	--	--	NA	NA	0.005 U	0.005 U	0.005 U	0.005 U
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	NA	0.001 U	0.001 U	0.001 U	0.001 U
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	--	NA	NA	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	400	13	--	3300 (f)	--	--	--	74,000	28,000	--	--	--	NA	NA	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	2000	--	--	3300 (f)	--	--	--	51,000	24,000	--	--	--	NA	NA	0.001 U	0.001 U	0.001 U	0.001 U
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	0.002 U	0.00388	0.002 U	0.002 U
Methyl Iodide	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert-butyl ether	70	--	--	--	--	--	--	760	8000	--	720	0.30	NA	NA	NA	NA	NA	NA
Naphthalene	130	04	10	3900	--	--	--	770	710	20,000	--	15	NA	NA	0.020 U	0.010 U	0.010 U	0.010 U
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	--	NA	NA	0.004 U	0.002 U	0.002 U	0.002 U
n-Propylbenzene	240	--	--	3300 (f)	--	--	--	19,000	9300	--	--	--	NA	NA	0.002 U	0.001 U	0.001 U	0.001 U
o-Xylene	420 (g)	210 (g)	1	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	0.001 U	0.00221	0.001 U	0.001 U
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	--	NA	NA	0.002 U	0.001 U	0.001 U	0.001 U
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	--	NA	NA	0.002 U	0.001 U	0.001 U	0.001 U
Toluene	520	12	200	1440	--	--	--	86,000	39,000	--	--	160	NA	NA	0.00164	0.00521	0.002	0.001 U
HYDROCARBONS (mg/kg)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	21.1 U	21.1 U	21.1 U	21.5 U
Kerosene	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	52.6 U	52.6 U	52.6 U	53.8 U
Diesel	--	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	Diesel	Diesel	Diesel	Diesel
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	Lube Oil	105 U	105 U	108 U
NWTPH-Dx (mg/kg)																		
TPH-Diesel Range	--	--	--	--	--	--	--	70,000	23,000	--	--	--	5.9 U	11	438	430	253	89.2
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	308	164	142	102
NWTPH-G (mg/kg)																		
TPH-Gasoline Range	--	--	--	--	--	--	--	22,000	13,000	--	80,000	110	5.0 U	5.0 U	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/kg)																		
Arsenic (7060)	1.6 (h)	29	10 (i)	29 (i)	10 (i)	60 (i)	5 (j)	--	--	--	--	--	NA	NA	2.53 J	2.09	2.19	2.07
Chromium (6010)	450	36	1 (h)(k)	940,000 (k)	4 (h)(k)	0.5 (h)(k)	23.1	--	--	--	--	--	NA	NA	12.6	22.0	15.3	17.4
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	--	NA	NA	10.9	22.4	18.0	22.4 J
Lead (7421)	900	--	60	4000	16	600	9	750	750	750	--	30	NA	NA	56.0	39.5	62.8	13.6 J
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	--	NA	NA	11.0	18.9	14.6	17.0
Zinc (6010)	100,000	12,000	50 (h)	20,000	60 (h)	200	60.2	--	--	--	--	--	NA	NA	65.0	77.7	71.2	57.0
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA
Mercury (7471)	310	--	0.3	75	1.5	0.1	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA

TABLE C-1a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	
	Risk-Based Concentrations										COMP		COMP	COMP	COMP	COMP	COMP	COMP	COMP	
	EPA Region 9 PRGs		Oregon SLVs			Background	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater	LW4D (0-0.5)	LW6D (0-0.5)	G2 (0-0.5)	G3 (0-0.5)	G8 (0-0.5)	G9 (0-0.5)	G12 (0-0.5)	G13 (0-0.5)	G14 (0-0.5)
	Construction		Excavation	Occupational	Worker		Worker	Occupational	Occupational	R950A	R950I	0108151-01	0108151-09	0108151-13	0108189-08	0108151-18	0108172-01	0108172-05		
	Industrial	DAF=20	Plants	Mammals	Birds		Inverts													
BETX (mg/kg)																				
EPA Method SW8021B																				
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	0.061 U	0.058 U	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	0.061 U	0.058 U	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	0.061 U	0.058 U	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	0.061 U	0.058 U	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	0.061 U	0.058 U	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																				
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

BZTO104(e)023374

TABLE C-1a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA										0-0.5						1-1.5				
						Risk-Based Concentrations					COMP	COMP			COMP	COMP	COMP				
						Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater											
	EPA Region 9 PRGs		Oregon SLVs			Background	Construction		Excavation	Occupational	Occupational	G16 (0-0.5)	G16-GRAB	BA1 (0-0.5)	BA12 (0-0.5)	BA16 (0-0.5)	BA17 (0-0.5)	G2 (1-1.5)	G3 (1-1.5)	G8 (1-1.5)	
	Industrial	DAF=20	Plants	Mammals	Birds		Inverts	Occupational	Worker												Worker
BETX (mg/kg)																					
EPA Method SW8021B																					
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (l)	--	--	--	71,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	420	210	--	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																					
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

BZTO104(e)023377

TABLE C-1a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5
	EPA Region 9 PRGs		Oregon SLVs			Background	Risk-Based Concentrations			Volatilization to Outdoor Air	Leaching to Groundwater	COMP	COMP	COMP	COMP	COMP	COMP	COMP
	Industrial DAF=20		Plants	Mammals	Birds		Soil Ingestion, Dermal Contact, and Inhalation	Construction	Excavation			G9 (1-1.5)	Dup of G9 (1-1.5)	G12 (1-1.5)	G13 (1-1.5)	G14 (1-1.5)	G16 (1-1.5)	BA1 (1-1.5)
							Occupational Worker	Worker	Worker			0108189-09	0108189-07	0108151-19	0108172-02	0108172-06	0108172-10	0108172-33
BETX (mg/kg)												8/24/2001	8/24/2001	8/20/2001	8/21/2001	8/21/2001	8/21/2001	8/22/2001
EPA Method SW8021B																		
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																		
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA

TABLE C-1a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification Date Collected	SCREENING CRITERIA										1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5
	EPA Region 9 PRGs		Oregon SLVs			Background	Risk-Based Concentrations					COMP					
	Industrial DAF=20		Plants	Mammals	Birds		Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater	BA19 (1-1.5)		BA16 (1-1.5)	BA17 (1-1.5)	HB01 (1-1.5)	HB02 (1-1.5)
							Occupational	Worker	Excavation Worker	Occupational	Occupational	Dup of BA15 (1-1.5)	0108172-19	0108172-26	0108192-20	0310117-02	0310117-07
												8/22/2001	8/22/2001	8/22/2001	8/23/2001	10/15/2003	10/15/2003
VOLATILES (mg/kg)																	
EPA Method SW8260																	
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	0.001 U	0.001 U	0.0174 J	0.01 U	0.01 U	0.01 U
1,2-Dichlorobenzene	0.073	--	--	3300 (f)	--	--	0.033	0.25	7.1	1.7	0.000059	0.001 U	0.001 U	0.001 U	0.01 U	0.01 U	0.01 U
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	0.001 U	0.001 U	0.0305 J	0.01 U	0.01 U	0.01 U
2,5-Dimethylbenzene	110,000	--	--	3300 (f)	--	--	--	--	--	--	--	0.005 U	0.005 U	0.005 U	NA	NA	NA
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	NA	NA	NA
Acetone	54,000	15	--	1250	--	--	--	--	--	--	--	0.005 U	0.005 U	0.209	NA	NA	NA
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	0.001 U	0.001 U	0.001 U	0.01 U	0.01 U	0.01 U
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	0.001 U	0.001 U	0.001 U	0.01 U	0.01 U	0.01 U
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	0.001 U	0.001 U	0.001 U	0.01 U	0.01 U	0.01 U
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	0.002 U	0.002 U	0.002 U	0.02 U	0.0304	0.02 U
Methyl iodide	--	--	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	NA	NA	NA
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	10 U	10 U	10 U
Naphthalene	150	84	10	3900	--	--	770	710	20,000	--	15	0.010 U	0.010 U	0.010 U	NA	NA	NA
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	0.002 U	0.002 U	0.002 U	NA	NA	NA
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9300	--	--	--	0.001 U	0.001 U	0.001 U	0.01 U	0.01 U	0.01 U
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	0.001 U	0.001 U	0.0061 J	0.01 U	0.01 U	0.01 U
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	NA	NA	NA
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	NA	NA	NA
Toluene	520	12	200	1440	--	--	68,000	39,000	--	180	--	0.001 U	0.001 U	0.001 U	0.01 U	0.01 U	0.01 U
HYDROCARBONS (mg/kg)																	
NWTPH-HCID																	
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	21.5 U	21.7 U	22.0 U	NA	NA	NA
Kerosene	--	--	--	--	--	--	--	--	--	--	--	53.8 U	54.3 U	54.9 U	NA	NA	NA
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	53.8 U	54.3 U	Diesel	NA	NA	NA
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	108 U	109 U	110 U	NA	NA	NA
NWTPH-Dx (mg/kg)																	
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	1360 J	33.9	97.4	681
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	80.8 J	56.4 U	63.6	229 M
NWTPH-G (mg/kg)																	
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	32.4	2.68 U	2.78 U
PRIORITY POLLUTANT METALS (mg/kg)																	
Arsenic (7060)	1.6 (h)	29	10 (i)	29 (i)	10 (i)	60 (i)	5 (j)	--	--	--	--	3.25	2.25	2.93	NA	NA	NA
Chromium (6010)	450	38	1 (k)	240,000 (k)	4 (h)(k)	0.4 (h)(k)	23.1	--	--	--	--	15.5	16.0	16.5	NA	NA	NA
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	14.8	13.2	12.8	NA	NA	NA
Lead (7421)	800	--	50	4000	16	500	9	750	750	750	30	12.2	1.69	1.24	53.2	156 U	2.99
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	17.5	17.3	18.7	NA	NA	NA
Zinc (6010)	100,000	12,000	50 (h)	20,000	60 (h)	200	60.2	--	--	--	--	52.5	645	47.5	199	56.1	70
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA
Mercury (7421)	310	--	0.3	73	1.5	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA

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TABLE C-1a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (0-3 FT)
PHASE III RI

SCREENING CRITERIA													1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5																
													Risk-Based Concentrations								COMP															
													Background				Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater	BA18 (1-1.5) Dup of BA15 (1-1.5) 0108172-19 8/22/2001								BA16 (1-1.5) 0108172-26 8/22/2001	BA17 (1-1.5) 0108182-20 8/23/2001	HB01 (1-1.5) 0310117-02 10/15/2003	HB02 (1-1.5) 0310117-07 10/15/2003	HB03 (1-1.5) 0310117-21 10/15/2003	HB04 (1-1.5) 0310117-16 10/15/2003	HB05 (1-1.5) 0310117-12 10/15/2003
																	Occupational	Construction Worker	Excavation Worker	Occupational	Occupational															
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs		Oregon SLVs																																	
	Industrial	DAF=20	Plants	Mammals	Birds	Inverts																														
BETX (mg/kg)																																				
EPA Method SW8021B																																				
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA												
Ethylbenzene	480	19	--	3900 (f)	--	--	--	74,000	28,000	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA												
Toluene	520	12	200	1440	--	--	--	68,000	39,000	--	--	180		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA												
Xylenes, Total	420	210	--	--	--	--	--	24,000	19,000	--	--	100		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA												
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA												
o-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA												
DIOXINS AND FURANS (ng/kg)																																				
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA												

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TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF						CF						CF					
Risk-Based Concentrations						COMP						COMP						COMP					
Sample Identification:		EPA Region 9	Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	G16 (5-5.5)	H801 (5-6)	H802 (5-6)	H803 (5-6)	H804 (5-6)	H805 (5-6)	LW4D (31.5-33.0)	LW6D (15-16.5)	LW6D (16.5-18.0)	LW6D (24.0-25.5)	LW6D (28.5-30.0)	G2 (15-21)					
Laboratory Identification:	PRGs	Excavation Worker		Occupational	Occupational	0108172-11	0310117-03	0310117-08	0310117-22	0310117-17	0310117-13	R950H	R950J	R950K	R950L	R950M	0108151-04						
Date Collected:	DAF=20					8/21/2001	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003		03/13/97	03/13/97	03/13/97	03/13/97	03/13/97	8/20/2001					
VOLATILES (mg/kg)																							
EPA Method SW8260																							
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	36 J	12 J	0.01 U	0.01 UJ	153 J	NA	NA	NA	NA	NA	NA	0.022 J					
1,2-Dibromobenzene	--	--	40,000	1.7	0.000059	NA	0.01 UJ	0.01 UJ	0.01 U	0.01 UJ	0.01 UJ	NA	NA	NA	NA	NA	NA	0.023 J					
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	0.652 J	1.26 J	0.01 U	0.01 UJ	3.89 J	NA	NA	NA	NA	NA	NA	43.300 J					
2-Butanone	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 UJ					
4-Isopropyltoluene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5.460 J					
Acetone	16	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.035 UJ					
Benzene	0.03	--	9400	48	0.052	NA	0.01 UJ	0.0388 J	0.01 U	0.01 UJ	0.021 J	NA	NA	NA	NA	NA	NA	0.062 J					
Carbon Disulfide	32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.021 UJ					
Ethylbenzene	13	--	--	--	--	NA	0.608 J	0.212 J	0.01 U	0.01 UJ	11.4 J	NA	NA	NA	NA	NA	NA	0.896 J					
Isopropylbenzene	--	--	--	--	--	NA	0.657 J	1.37 J	0.01 U	0.01 UJ	4.24 J	NA	NA	NA	NA	NA	NA	11.300 J					
m,p-Xylene	210 (g)	--	--	--	--	NA	4.33 J	0.982 J	0.02 U	0.02 UJ	99.4 J	NA	NA	NA	NA	NA	NA	0.097 J					
Methyl Iodide	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 UJ					
Methyl tert-butyl ether	--	--	--	720	0.30	NA	10 UJ	10 UJ	10 U	10 UJ	10 UJ	NA	NA	NA	NA	NA	NA	NA					
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.016 J					
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.700 J					
n-Propylbenzene	--	--	--	--	--	NA	2.24 J	3.39 J	0.01 U	0.01 UJ	20 J	NA	NA	NA	NA	NA	NA	36.000 J					
o-Xylene	210 (g)	--	--	--	100 (g)	NA	1.68 J	0.471 J	0.01 U	0.01 UJ	41.9 J	NA	NA	NA	NA	NA	NA	0.001 UJ					
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.788 J					
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.019 J					
Toluene	12	--	--	--	180	NA	0.196 J	0.0332 J	0.01 U	0.01 UJ	3.23 J	NA	NA	NA	NA	NA	NA	0.021 J					
HYDROCARBONS (mg/kg)																							
NWTPH-ICID																							
Gasoline	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Gasoline					
Kerosene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.81 U					
Diesel	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Diesel					
Lube Oil	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Lube Oil					
NWTPH-Dx (mg/kg)																							
TPH-Diesel Range	--	--	--	--	--	NA	2710 J	7170 J	159	16.9 U	2200	6.9 U	6.1 U	NA	NA	NA	6.4 U	4780 J					
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
TPH-Motor Oil Range	--	--	--	--	--	NA	109 J	280 MJ	70.7 M	56.2 U	63.3 M	NA	NA	NA	NA	NA	NA	58.1 U					
NWTPH-G (mg/kg)																							
TPH-Gasoline Range	--	--	--	80,000	110	NA	2540	1540 J	3.43	121	6120	4.6	5.0 U	NA	5.0 U	5.0 U	1860 J						
PRIORITY POLLUTANT METALS (mg/kg)																							
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.25					
Chromium (6010)	36	23.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.2					
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.1					
Lead (7421)	--	19	750	--	30	NA	29.1	1.45 U	3.58	1.67 U	101 U	NA	NA	NA	NA	NA	NA	3.72 U					
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	15.8					
Zinc (6010)	12,000	60.2	--	--	--	NA	43.8	39.1	45.4	48.4	44.9	NA	NA	NA	NA	NA	NA	42.7					
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA					

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	CF	CF	CF	CF	CF	CF
Risk-Based Concentrations						COMP						COMP					
Soil Ingestion, Dermal Contact, and Inhalation						G16 (5-5.5)						LW4D (31.5-33.0)					
Volatilization to Outdoor Air						HB01 (5-6)						LW6D (15-16.5)					
Leaching to Groundwater						HB02 (5-6)						LW6D (16.5-18.0)					
Excavation Worker						HB03 (5-6)						LW6D (24.0-25.5)					
Occupational						HB04 (5-6)						LW6D (26.5-30.0)					
Occupational						HB05 (5-6)						G2 (15-21)					
Sample Identification:	EPA Region 9	Background				0109172-11	0310117-03	0310117-08	0310117-22	0310117-17	0310117-13	R950H	R950J	R950K	R950L	R950M	0108151-04
Laboratory Identification:	PRGs					8/21/2001	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	03/13/97	03/13/97	03/13/97	03/13/97	03/13/97	8/20/2001
Date Collected:	DAF=20																
BTEX (mg/kg)																	
EPA Method SW8021B																	
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	0.074 U	0.08 U	NA	0.069 U	0.071 U	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	0.074 U	0.08 U	NA	0.069 U	0.071 U	NA
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	0.074 U	0.08 U	NA	0.069 U	0.071 U	NA
Xylenes - Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	0.074 U	0.08 U	NA	0.069 U	0.071 U	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	0.074 U	0.08 U	NA	0.069 U	0.071 U	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	0.074 U	0.08 U	NA	0.069 U	0.071 U	NA
DIOXINS AND FURANS (ng/kg)																	
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA					CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Risk-Based Concentrations					COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP
Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	G3 (11-15)	G8 (14-24)	G9 (13-15)	G12 (13-20)	G13 (14-17)	G14 (13-15)	G16 (15-18)	BA1 (14-15)	BA12 (11-13)	BA15 (17-18)	BA16 (16-17)	BA17 (12-13)	G2-4 (18.5-19.5)		
Excavation Worker	Occupational	Occupational	0108151-12 8/20/2001	0108151-17 8/20/2001	0108189-11 8/24/2001	0108151-21 8/20/2001	0108172-04 8/21/2001	0108172-08 8/21/2001	0108172-12 8/21/2001	0108172-35 8/22/2001	0108151-08 8/20/2001	0108172-24 8/22/2001	0109172-28 8/22/2001	0108182-22 8/23/2001	0207087-02 7/11/2002		
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background															
VOLATILES (mg/kg)																	
EPA Method SW8260																	
1,2-Dichlorobenzene	--	--	40,000	790	55	0.00443	0.001 U	44.90	0.00229	0.001 U	54.000	0.001 U	0.001 U	3.630	0.001 U	0.001 U	0.104 J
1,2-Dichloroethane	--	--	7.1	1.7	0.000059	0.001 U	0.001 U	0.010 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	--	--	40,000	--	12	0.00804	0.001 U	14.200	0.001 U	0.001 U	31.700	0.001 U	0.001 U	0.768	0.001 U	0.001 U	0.288 J
2-Butanone	--	--	--	--	--	0.006 U	0.005 U	0.005 U	0.00567	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
4-Isopropyltoluene	12 (a)	--	--	--	--	0.0137	0.001 U	0.415	0.001 U	0.001 U	7.120	0.001 U	0.001 U	1.040	0.001 U	0.001 U	0.019
Acetone	16	--	--	--	--	0.00607	0.014	0.010	0.0163	0.002 U	0.005 U	0.005 U	0.0123	0.005 U	0.00663	0.001 U	0.001 U
Benzene	0.03	--	9400	48	0.052	0.001 U	0.001 U	0.00312	0.001 U	0.001 U	0.00396	0.001 U	0.001 U	0.00154	0.001 U	0.001 U	0.0303
Carbon Disulfide	32	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	13	--	--	--	--	0.0428	0.001 U	13.200	0.00135	0.108	18.800	0.001 U	0.001 U	0.0438	0.001 U	0.001 U	0.0911
Isopropylbenzene	--	--	--	--	--	9.420	0.174	5.880	0.00811	1.150	14.800	0.001 U	0.001 U	0.768	0.001 U	0.001 U	5.320
m,p-Xylene	210 (g)	--	--	--	--	0.0281	0.002 U	56.200	0.00337	0.129	52.300	0.002 U	0.002 U	0.145	0.002 U	0.002 U	0.173 J
Methyl Chloride	--	--	--	--	--	0.001 U	0.001 U	0.00966	0.001 U	0.00975	0.001 U	0.00989	0.001 U	0.001 U	0.001 U	0.001 U	0.00972
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	0.0164	0.0164	6.920	0.011	0.010 U	2.860	0.010 U	0.010 U	0.0483	0.010 U	0.010 U	0.0149
n-Butylbenzene	--	--	--	--	--	20.500	0.406	5.810	0.0412	2.870	7.780	0.002 U	0.002 U	0.754	0.002 U	0.002 U	6.490 J
n-Propylbenzene	--	--	--	--	--	37.500	0.505	8.330	0.0147	5.870	24.400	0.001 U	0.001 U	1.130	0.001 U	0.001 U	9.910
o-Xylene	210 (g)	--	--	--	100 (g)	0.0228	0.001 U	16.000	0.00141	0.0935	0.050 U	0.001 U	0.001 U	0.0417	0.001 U	0.001 U	0.001 U
sec-Butylbenzene	--	--	--	--	--	5.450	0.829	16.831	0.00994	3.100	2.980	0.001 U	0.001 U	0.950	0.001 U	0.001 U	1.110 J
tert-Butylbenzene	--	--	--	--	--	0.103	0.001 U	0.001 U	0.00166	0.0388	0.107	0.001 U	0.001 U	0.00931	0.001 U	0.001 U	0.001 U
Toluene	12	--	--	--	180	0.0261	0.00246	0.330	0.00143	0.218	0.356	0.001 U	0.001 U	0.00574	0.001 U	0.001 U	0.0360
HYDROCARBONS (mg/kg)																	
NWTPH-HCID																	
Gasoline	--	--	--	80,000	110	Gasoline	22.2 U	Gasoline	22.5 U	Gasoline	Gasoline	22.5 U	24.7 U	23.3 U	23.0 U	Gasoline	23 U
Kerosene	--	--	--	--	--	57.5 U	56.6 U	56.6 U	56.2 U	58.6 U	56.8 U	56.2 U	61.7 U	58.1 U	57.5 U	57.5 U	57.5 U
Diesel	--	--	--	--	--	Diesel	Diesel	Diesel	Diesel	Diesel	56.8 U	56.2 U	61.7 U	Diesel	57.5 U	57.5 U	Diesel
Lube Oil	--	--	--	--	--	Lube Oil	111 U	Lube Oil	Lube Oil	116 U	114 U	112 U	123 U	116 U	116 U	115 U	115 U
NWTPH-Dx (mg/kg)																	
TPH-Diesel Range	--	--	--	--	--	7030 J	5860 J	8270 J	2420 J	2720	NA	NA	NA	8190 J	NA	NA	9480 J
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	485	55.6 U	284 U	168 J	58.8 U	NA	NA	NA	291 U	NA	NA	225 U
NWTPH-G (mg/kg)																	
TPH-Gasoline Range	--	--	--	80,000	110	1270 J	NA	2050	NA	2940	4880	NA	NA	NA	NA	1600	NA
PRIORITY POLLUTANT METALS (mg/kg)																	
Arsenic (7060)	29	5 (l)	--	--	--	1.92	2.15	2.78	2.7	2.24	2.39	2.21	1.86	2.59	2.14	3.22	2.13
Chromium (6010)	38	28.1	--	--	--	14.7	13.7	14.4	13.4	12.5	16	16.4	16.4	15.1	18.0	16.1	13.5
Copper (6010)	--	19.1	--	--	--	12.8	12.4	12.8 J	13.2	12.1	13.1	14.0	15	13.3	14.5	14.3	12.3
Lead (7424)	--	9	750	--	30	2.85	1.92 U	2.8	1.85 U	1.72 U	1.92 U	1.89 U	3.14	2.50	7.17	1.92 U	2.19
Nickel (6010)	130	21.4	--	--	--	16.9	16.8	16.4	16.2	15.4	17.8	18.2	17	16.5	19	17.3	17
Zinc (6010)	12,000	60.2	--	--	--	46.6	46.3	43.2	44.5	42.4	56.2	161	233	44.6	496	1020	43.5
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
SCREENING CRITERIA																		
		Background	Risk-Based Concentrations			COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP			COMP		
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater													
Sample Identification: EPA Region 9 PRGs			Excavation Worker	Occupational	Occupational													
Laboratory Identification: DAF=20																		
Date Collected:						8/20/2001	8/20/2001	8/24/2001	8/20/2001	8/21/2001	8/21/2001	8/21/2001	8/22/2001	8/20/2001	8/22/2001	8/22/2001	8/23/2001	7/11/2002
BETX (mg/kg)																		
EPA Method SW8021B																		
Benzene		0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene		13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene		12	--	--	--	160	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total		210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene		210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene		210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																		
Total TEQ		--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Risk-Based Concentrations																
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs	Background	Soil Ingestion, Dermal Contact, and Inhalation Excavation Worker	Volatilization to Outdoor Air Occupational	Leaching to Groundwater Occupational	G2-5 (16-17) 0207087-03 7/11/2002	G12-3 (17.5-18.5) 0207087-04 7/11/2002	G13-4 (14.5-15.5) 0207087-05 7/11/2002	HB01 (10-11) 0310117-04 10/15/2003	HB01 (14-15) 0310117-05 10/15/2003	HB02 (10-11) 0310117-09 10/15/2003	HB02 (13-14) 0310117-10 10/15/2003	HB03 (10-11) 0310117-23 10/15/2003	HB04 (10-11) 0310117-18 10/15/2003	HB04 (12-13) 0310117-19 10/15/2003	HB05 (10-11) 0310117-14 10/15/2003
VOLATILES (mg/kg)																
EPA Method SW8260																
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	NA	116 J	141 J	0.022 J	0.0169 J	151	0.01 U	0.0157 J	114
1,2-Dichloroethane	--	--	7.1	1.7	0.000059	NA	NA	NA	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	NA	5.81 J	8.29 J	1.71 J	2.42 J	8.13	0.01 U	1.09 J	5.13 J
2-Ethanol	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	16	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	0.1 U	0.136 J	0.0857 J	0.0942 J	0.1 U	0.01 U	0.01 U	5.29 J
Carbon Disulfide	32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	11.8 J	33.6 J	0.0574 J	0.0563 J	39	0.01 U	0.01 U	26.8 J
Isopropylbenzene	--	--	--	--	--	NA	NA	NA	6.47 J	9.3 J	1.93 J	2.72 J	8.93	0.01 U	1.42 J	5.27 J
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	89.6 J	239 J	0.194 J	0.332 J	182	0.02 U	0.0448 J	182 J
Methyl Isobutyl Ketone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA	NA	100 U	100 U	10 U	10 U	100 U	10 U	10 U	10 U
Naphthalene	64	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	--	--	--	--	NA	NA	NA	16.2 J	21.9 J	3.82 J	5.83 J	28.8	0.01 U	1.6 J	67.9 J
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	35.4 J	88.6 J	0.0941 J	0.114 J	112	0.01 U	0.0304 J	67.9 J
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	NA	152 J	20 J	0.0625 J	0.225 J	1.76	0.01 U	0.0205 J	64.9 J
HYDROCARBONS (mg/kg)																
NWTPH-HCID																
Gasoline	--	--	--	80,000	110	23.5 U	22.2 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	58.7 U	35.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	Diesel	55.6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	Lube Oil	111 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)																
TPH-Diesel Range	--	--	--	--	--	1550 J	NA	304	4020 J	10100 J	12000 J	13100 J	5250 J	893 J	2430 J	5910 J
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	225 J	NA	54.8 U	83 MJ	568 U	585 U	561 U	218 MJ	190 MJ	117 MJ	101 MJ
NWTPH-G (mg/kg)																
TPH-Gasoline Range	--	--	--	80,000	110	NA	NA	119	3280	6880	1830 J	2670	8560	10.1	1330 J	3070
PRIORITY POLLUTANT																
METALS (mg/kg)																
Arsenic (7060)	28	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	38	25.3	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (7421)	--	9	750	--	30	NA	NA	NA	37.1	3.22	1.61 U	1.43 U	2.05	1.64 U	1.58 U	1.64 U
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	12,000	60.2	--	--	--	NA	NA	NA	42.6	47.7	50.1	40.1	44.8	45.4	43.2	45
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
SCREENING CRITERIA																
Risk-Based Concentrations																
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	G2-5 (16-17)	G12-3 (17.5-18.5)	G13-4 (14.5-15.5)	HB01 (10-11)	HB01 (14-15)	HB02 (10-11)	HB02 (13-14)	HB03 (10-11)	HB04 (10-11)	HB04 (12-13)	HB05 (10-11)
			Excavation Worker	Occupational	Occupational	0207087-03	0207087-04	0207087-05	0310117-04	0310117-05	0310117-09	0310117-10	0310117-23	0310117-18	0310117-19	0310117-14
						7/11/2002	7/11/2002	7/11/2002	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003
BTEX (mg/kg)																
EPA Method SW8021B																
Benzene	0.03	--	9400	48	0.052	NA	NA	0.0274 U	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	0.110 U	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	0.110 U	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA	0.329 U	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF = 0.0007	CF = 0.0007	CF = 0.0007	CF = 0.0007	CF = 0.0007	CF = 0.0007	CF = 0.0007	CF = 0.0007	CF = 0.0007	CF = 0.0007	CF = 0.0007
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			LW19S (16.5-17.5) 0309195-01 9/29/2003	LW20D (12-13) 0310011-01 9/30/2003	LW21S (13.5-14.5) 0310149-03 10/21/2003	LW22D (24-25) 0309163-04 9/24/2003	LW23D (22.5-23.5) 0309163-03 9/24/2003	LW24D (26-27) 0310149-02 10/20/2003	LW25D (28-29) 0310149-01 10/20/2003	LW26D (15-16) 0309185-01 9/25/2003	LW27S (13.5-14.5) 0309185-02 9/25/2003	LW27S (21-22) 0309185-03 9/25/2003	LW35D (27-28) 0310011-02 10/1/2003
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational											
SEMIVOLATILES (mg/kg)																
EPA Method SW8270																
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	570	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butyltin diisobutyltin	836	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	0.5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D-n-Butylphthalate	2300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
D-n-Octylphthalate	10,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	560	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	0.5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (mg/kg)																
EPA Method SW8270SIM																
Acenaphthene	570	--	--	--	--	2.24	1.14	0.399	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.513	0.953	1.52	0.00667 U
Acenaphthylene	84 (b)	--	--	--	--	0.363	0.533	0.125	0.00667 U	0.00667 U	0.00667 U	0.0113	0.157	0.353	0.47	0.00667 U
Anthracene	12,000	--	--	--	--	1.14	0.8	0.175	0.008	0.022	0.0107	0.0433	0.0947	0.17	0.309	0.00667 U
Benzo(a)anthracene	2	--	590	--	--	0.0707	0.078	0.138	0.0167	0.0413	0.0213	0.115	0.0133	0.00933	0.00667	0.0147
Benzo(a)pyrene	8	--	59	--	--	0.0133	0.0493	0.132	0.0127	0.0313	0.02	0.101	0.00867	0.00667 U	0.0527	0.0127
Benzo(b)fluoranthene	5	--	--	--	--	0.0127	0.054	0.119	0.0127	0.0293	0.0173	0.0987	0.008	0.00667 U	0.05	0.0147
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	0.01	0.024	0.056	0.00667 U	0.014	0.00933	0.0433	0.00667 U	0.00667 U	0.026	0.00733
Benzo(k)fluoranthene	49	--	5900	--	--	0.00667 U	0.0173	0.046	0.00667 U	0.0113	0.00733	0.04	0.00667 U	0.00667 U	0.0153	0.00667 U
Chrysene	160	--	59,000	--	--	0.0933	0.0813	0.136	0.014	0.0367	0.02	0.118	0.0113	0.012	0.064	0.014
Dibenz(a,h)anthracene	2	--	59	--	--	0.00667 U	0.00667 U	0.016	0.00667 U	0.00667 U	0.00667 U	0.0133	0.00667 U	0.00667 U	0.00667 U	0.00667 U
Fluoranthene	4300	--	--	--	--	0.07	0.17	0.139	0.0293	0.0733	0.0307	0.169	0.026	0.0233	0.137	0.0227
Fluorene	560	--	--	--	--	5.35	4.06	0.813	0.00667 U	0.00667 U	0.00667 U	0.00667 U	1.13	2.11	2.84	0.00667 U
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	0.00867	0.0207	0.0467	0.00667 U	0.012	0.008	0.038	0.00667 U	0.00667 U	0.0213	0.00667 U
Naphthalene	84	--	20,000	--	15	4.36	0.622	0.22	0.00667 U	0.00667 U	0.00667 U	0.00667 U	0.213	0.68	0.883	0.00667 U
Phenanthrene	84 (b)	--	--	--	--	9.61	5.17	1.3	0.0327	0.0627	0.0213	0.136	1.17	1.88	2.76	0.0147
Pyrene	4200	--	--	--	--	1.26	0.443	0.255	0.038	0.0847	0.0413	0.233	0.0627	0.0493	0.24	0.0267
CHLORINATED PHENOLS (mg/kg)																
Method 8040/8270SIM																
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs	Background	Risk-Based Concentrations			LW19S (16.5-17.5) 0309195-01 9/29/2003	LW20D (12-13) 0310011-01 8/30/2003	LW21S (13.5-14.5) 0310149-03 10/21/2003	LW22D (24-25) 0309163-04 9/24/2003	LW23D (22.5-23.5) 0309163-03 9/24/2003	LW24D (26-27) 0310149-02 10/20/2003	LW25D (28-29) 0310149-01 10/20/2003	LW26D (15-16) 0309185-01 9/25/2003	LW27S (13.5-14.5) 0309185-02 9/25/2003	LW27S (21-22) 0309185-03 9/25/2003	LW35D (27-28) 0310011-02 10/1/2003
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational											
VOLATILES (mg/kg)																
EPA Method SW8260																
1,2,4-Trimethylbenzene	--	--	40,000	790	55	0.01 U	0.01 UJ	73.8 J	NA	NA	0.01 U	0.01 UJ	0.0237 J	0.0156 J	0.0129 J	0.01 U
1,2-Dibromochloroethane	--	--	7.3	1.7	0.000059	0.01 U	0.01 UJ	0.1 UJ	0.01 U	0.01 U	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U
1,3,5-Trimethylbenzene	--	--	40,000	--	12	0.01 U	1.11 J	6.83 J	NA	NA	0.01 U	0.01 UJ	1.04 J	0.832 J	1.05 J	0.01 U
2-Butanone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	15	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.03	--	9400	48	0.052	0.01 U	0.01 UJ	0.254 J	NA	NA	0.01 U	0.01 UJ	0.0445 J	0.01 U	0.01 U	0.01 U
Carbon Disulfide	32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	0.01 U	0.01 UJ	16.5 J	NA	NA	0.01 U	0.01 UJ	0.01 U	0.01 U	0.01 U	0.01 U
Isopropylbenzene	--	--	--	--	--	2.05 J	1.16 J	7.98 J	NA	NA	0.01 U	0.01 UJ	1.0 J	0.835 J	1.11 J	0.01 U
m,p-Xylene	210 (g)	--	--	--	--	0.02 U	0.02 UJ	68.8 J	NA	NA	0.02 U	0.02 UJ	0.0846 J	0.0382 J	0.02 U	0.02 U
Methyl Iodide	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	10 U	10 UJ	100 UJ	10 U	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	--	--	--	--	4.9 J	2.52 J	17.6 J	NA	NA	0.01 U	0.01 UJ	1.43 J	1.12 J	1.26 J	0.01 U
o-Xylene	210 (g)	--	--	--	100 (g)	0.01 U	0.042 J	16.2 J	NA	NA	0.01 U	0.01 UJ	0.066 J	0.01 U	0.01 U	0.01 U
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	0.01 U	0.01 UJ	0.676 J	NA	NA	0.01 U	0.01 UJ	0.0299 J	0.0146 J	0.0183 J	0.01 U
HYDROCARBONS (mg/kg)																
NWTPH-HCID																
Gasoline	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)																
TPH-Diesel Range	--	--	--	--	--	36100 J	13700 J	6290 J	16.6 U	16.6 U	20.2	18.7 U	12500 J	9000 J	9790 J	16.5 U
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	63.8 U	611 U	642 U	55.2 U	55.3 U	64.4 U	62.4 U	64.5 U	59.5 U	56.9 U	54.9 U
NWTPH-G (mg/kg)																
TPH-Gasoline Range	--	--	--	80,000	110	2310	2310	8920 J	2.76 U	2.76 U	3.22 U	3.12 U	2270 J	4190 J	5010 J	12.7
PRIORITY POLLUTANT METALS (mg/kg)																
Arsenic (7060)	29	5 (J)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	38	23.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (7421)	--	9	750	--	30	2.28 U	2.44 U	1.61 U	4.49 J	1.02 UJ	1.67 U	1.70 U	1.85 U	1.72 U	1.72 U	2.2 U
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	12,000	60.2	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7472)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Risk-Based Concentrations																
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational											
						LW19S (16.5-17.5) 0309195-01 9/28/2003	LW20D (12-13) 0310011-01 9/30/2003	LW21S (13.5-14.5) 0310149-03 10/21/2003	LW22D (24-25) 0309163-04 9/24/2003	LW23D (22.5-23.5) 0309163-03 9/24/2003	LW24D (26-27) 0310149-02 10/20/2003	LW25D (28-29) 0310149-01 10/20/2003	LW26D (15-16) 0309185-01 9/25/2003	LW27S (13.5-14.5) 0309185-02 9/25/2003	LW27S (21-22) 0309185-03 9/25/2003	LW35D (27-28) 0310011-02 10/1/2003
BETX (mg/kg)																
EPA Method SW8021B																
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	0.0278 U	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	0.13 U	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	NA	0.11 U	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA	NA	0.331 U	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF
Risk-Based Concentrations													
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	LW35D (29-29.5)	LW35D (30-31)	LW36D (7-8)	LW37D (6-7)	LW38D (7-8)	LW39D (5-6)	LW40S (21-21.5)	LW45D (27-28)
			Excavation Worker	Occupational	Occupational	0310011-03 10/1/2003	0310011-04 10/1/2003	0411033-04 11/2/2004	0411033-05 11/2/2004	0411033-06 11/2/2004	0411033-07 11/3/2004	0411033-02 11/1/2004	0411033-03 11/1/2004
SEMIVOLATILES (mg/kg)													
EPA Method SW8270													
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	0.333 U	0.333 U	0.333 U	0.333 U	0.333 U	0.333 U
2-Methylnaphthalene	84 (b)	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Acenaphthene	570	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.112	0.0667 U	0.0667 U
Anthracene	12,000	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.355	0.0667 U	0.0667 U
Benzo(a)anthracene	2	--	590	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.658	0.0667 U	0.0667 U
Benzo(a)pyrene	8	--	59	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.585	0.0667 U	0.0667 U
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.517	0.0667 U	0.0667 U
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.157	0.0667 U	0.0667 U
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.182	0.0667 U	0.0667 U
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Butylbenzylphthalate	930	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Carbazole	0.6	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Chrysene	160	--	59,000	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.655	0.0667 U	0.0667 U
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Dibenz(a,i)anthracene	--	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Diethyltoluene	--	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Di-n-Butylphthalate	2300	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Di-n-Octylphthalate	10,000	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Fluoranthene	4300	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.775	0.0667 U	0.0667 U
Fluorene	560	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Hexachloroethane	0.5	--	--	--	--	NA	NA	0.133 U	0.133 U	0.133 U	0.133 U	0.133 U	0.133 U
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.16	0.0667 U	0.0667 U
Naphthalene	84	--	20,000	--	15	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U	0.0667 U
Pentachlorophenol	0.03	--	--	--	--	NA	NA	0.333 U	0.333 U	0.333 U	0.333 U	0.333 U	0.333 U
Phenanthrene	84 (b)	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	0.674	0.0667 U	0.0667 U
Pyrene	4200	--	--	--	--	NA	NA	0.0667 U	0.0667 U	0.0667 U	1.09	0.0667 U	0.0667 U
SEMIVOLATILES (mg/kg)													
EPA Method SW8270SIM													
Acenaphthene	570	--	--	--	--	0.00667 U	0.0107	NA	NA	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	0.01	0.0433	NA	NA	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	0.036	0.078	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	0.0487	0.104	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	0.0493	0.115	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	0.04	0.094	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	0.0233	0.0667	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	5900	--	--	0.0147	0.03	NA	NA	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	0.0433	0.0913	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	0.00667 U	0.0113	NA	NA	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	0.078	0.205	NA	NA	NA	NA	NA	NA
Fluorene	560	--	--	--	--	0.00667 U	0.0207	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	0.0193	0.0493	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	0.00667 U	0.0493	NA	NA	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	0.0447	0.161	NA	NA	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	0.107	0.27	NA	NA	NA	NA	NA	NA
CHLORINATED PHENOLS (mg/kg)													
Method 8040/8270SIM													
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			LW35D (29-29.5) 0310011-03 10/1/2003	LW35D (30-31) 0310011-04 10/1/2003	LW36D (7-8) 0411033-04 11/2/2004	LW37D (6-7) 0411033-05 11/2/2004	LW38D (7-8) 0411033-06 11/2/2004	LW39D (5-6) 0411033-07 11/3/2004	LW40S (21-21.5) 0411033-02 11/1/2004	LW45D (27-28) 0411033-03 11/1/2004
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater								
			Excavation Worker	Occupational	Occupational								
VOLATILES (mg/kg)													
EPA Method SW6260													
1,2,4-Trimethylbenzene	--	--	40,000	790	55	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA
1,2-Dibromomethane	--	--	40,000	1.7	0.000059	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	--	40,000	--	12	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA
2-Butanone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	16	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.03	--	9400	46	0.052	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA
Carbon Disulfide	32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA
Isopropylbenzene	--	--	--	--	--	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	0.02 U	0.02 U	NA	NA	NA	NA	NA	NA
Methyl Isobutyl Ketone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	10 U	10 U	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	16	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	--	--	--	--	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	0.01 U	0.01 U	NA	NA	NA	NA	NA	NA
HYDROCARBONS (mg/kg)													
NWTPH-HCID													
Gasoline	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)													
TPH-Diesel Range	--	--	--	--	--	19.7 U	44.3	18.8 U	19.1 U	19.5 U	20.2 U	17.4 U	19 U
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	65.8 U	92.3	62.5 U	63.6 U	64.9 U	155	57.9 U	63.2 U
NWTPH-G (mg/kg)													
TPH-Gasoline Range	--	--	--	80,000	110	7.28	5.07	3.12 U	3.18 U	3.24 U	3.36 U	2.89 U	3.16 U
PRIORITY POLLUTANT METALS (mg/kg)													
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	1.75 U	1.59 U	1.69 U	1.52 U	1.61 U	1.59 U
Chromium (6010)	38	28.1	--	--	--	NA	NA	13.5	11.9	14.7	11.8	12.8	14.4
Copper (6010)	--	19.1	--	--	--	NA	NA	11.3	10.4	10.2	9.97	12.3	11.7
Lead (7421)	--	9	750	--	30	2.63 U	4.38	1.75 U	1.59 U	1.69 U	1.52 U	1.61 U	1.59 U
Nickel (6010)	130	21.4	--	--	--	NA	NA	13.4	12.1	13.4	14.4	14.5	16.1
Zinc (6010)	12,000	60.2	--	--	--	NA	NA	26.7	45.2	40.1	41.2	50	45.8
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-1b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
MAIN TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF
Risk-Based Concentrations													
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	LW35D (29-29.5)	LW35D (30-31)	LW36D (7-8)	LW37D (6-7)	LW38D (7-8)	LW39D (5-6)	LW40S (21-21.5)	LW45D (27-28)
			Excavation Worker	Occupational	Occupational	0310011-03 10/1/2003	0310011-04 10/1/2003	0411033-04 11/2/2004	0411033-05 11/2/2004	0411033-06 11/2/2004	0411033-07 11/3/2004	0411033-02 11/1/2004	0411033-03 11/1/2004
BETX (mg/kg)													
EPA Method SW8021B													
Benzene	0.03	--	8400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	13-14	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)													
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	EPA Region 9 PRGs					Oregon SLVs					Background					Risk-Based Concentrations					COMP	COMP	COMP	COMP	COMP	COMP	COMP	BT-01 (0-0.5)																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
																Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
	Construction Worker	Excavation Worker	Occupational	Occupational	Occupational	0106208-18	0106215-05	0108215-01	0108208-06	0108215-09	0108215-13	0108208-10	0108208-11	0108208-12	0108208-13	0108208-14	0108208-15	0108208-16																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
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TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
	EPA Region 9 PRGs					Oregon SLVs					Risk-Based Concentrations					COMP	COMP	COMP
	Background					Soil Ingestion, Dermal Contact, and Inhalation					Volatilization to Outdoor Air					COMP	COMP	COMP
	Occupational					Construction					Excavation					COMP	COMP	COMP
	Occupational					Occupational					Occupational					COMP	COMP	COMP
BETX (mg/kg)																		
EPA Method SW8021B																		
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA
Ethylbenzene	460	13	--	3300 (l)	--	--	--	74,000	23,000	--	--	--	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA
Xylenes Total	420	210	--	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																		
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA

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TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	
	EPA Region 9 PRGs Industrial DAF=20 Plants Mammals Birds Inverts					Background	Risk-Based Concentrations					BT-02 (0-0.5) 0207040-08 7/8/2002	BT-03 (0-0.5) 0207040-13 7/8/2002	Dup of BT-03 (0-0.5) 0207040-06 7/8/2002	BT-04 (0-0.5) 0207059-18 7/9/2002	BT-05 (0-0.5) 0207040-17 7/8/2002	BT-06 (0-0.5) 0207059-13 7/9/2002	BT-13 (0-0.5) Dup of BT-06 (0-0.5) 0207059-11 7/9/2002
							Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater							
							Occupational	Construction Worker	Excavation Worker	Occupational	Occupational							
VOLATILES (mg/kg) EPA Method SW8260																		
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromomethane	0.073	--	--	--	--	--	0.033	0.25	7.1	1.7	0.00059	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	NA	NA	NA	NA	NA	NA	NA
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Acetone	54,000	16	--	1250	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA
Methyl Isobutyl Ether	70	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	15	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9300	--	--	--	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA
HYDROCARBONS (mg/kg)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	21.6 U	22 U	22.2 U	21.8 U	21.4 U	21.8 U	21.9 U
Kerosene	--	--	--	--	--	--	--	--	--	--	--	54.1 U	55.1 U	55.4 U	54.5 U	53.4 U	54.5 U	54.7 U
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	54.1 U	Diesel	Diesel	Diesel	53.4 U	54.5 U	54.7 U
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	108 U	110 U	111 U	Lube Oil	107 U	109 U	109 U
NWTPH-Dx (mg/kg)																		
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	244	237	198	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	67.2	69.6	699	NA	NA	NA
NWTPH-G (mg/kg)																		
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT																		
METALS (mg/kg)																		
Arsenic (7060)	1.6 (h)	29	10 (f)	29 (f)	10 (f)	60 (f)	5 (f)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	450	38	1 (h)(s)	340,000 (h)	4 (h)(s)	0.4 (h)(s)	23.1	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Lead (7421)	800	--	50	4000	16	500	9	750	750	750	30	NA	NA	NA	NA	NA	NA	NA
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Zinc (6310)	100,000	12,000	50 (h)	20,000	60 (h)	200	60.2	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	310	--	0.3	73	1.5	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

											0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5		
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA																		
	EPA Region 9 PRGs DAF=20 Plants Mammals Birds Inverts						Risk-Based Concentrations					BT-02 (0-0.5) 0207040-08 7/8/2002	BT-03 (0-0.5) 0207040-13 7/8/2002	Dup of BT-03 (0-0.5) 0207040-06 7/8/2002	BT-04 (0-0.5) 0207059-18 7/9/2002	BT-05 (0-0.5) 0207040-17 7/8/2002	BT-06 (0-0.5) 0207059-13 7/9/2002	BT-13 (0-0.5) Dup of BT-06 (0-0.5) 0207059-11 7/9/2002	
							Background	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air								Leaching to Groundwater
								Occupational	Construction Worker	Excavation Worker	Occupational								Occupational
BETX (mg/kg)																			
EPA Method SW8021B																			
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	
Ethylbenzene	400	13	--	3300 (f)	--	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	
Toluene	520	12	200	1440	--	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	
Xylenes, Total	420	210	--	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	
p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	
DIOXINS AND FURANS (ng/kg)																			
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	

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TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

SCREENING CRITERIA																			0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs		Oregon SLVs				Background	Risk-Based Concentrations			Volatilization to Outdoor Air	Leaching to Groundwater	BT-07 (0-0.5) 0207040-22 7/8/2002	BT-12 (0-0.5) Dup of BT-07 (0-0.5) 0207040-33 7/8/2002	BT-06 (0-0.5) 0207040-27 7/8/2002	BT-09 (0-0.5) 0207059-06 7/9/2002	BT-10 (0-0.5) 0207059-01 7/9/2002	G27-4 (0-0.5) 0309196-16 9/29/2003	G27-5 (0-0.5) 0309196-17 9/29/2003	LW41S (0-0.5) 0410156-02 10/28/2004							
	Industrial	DAF-20	Plants	Mammals	Birds	Inverts		Soil Ingestion, Dermal Contact, and Inhalation																			
								Occupational	Construction Worker	Excavation Worker																	
SEMIVOLATILES (mg/kg)																											
EPA Method SW8270																											
2,6-Dinitrotoluene	620	0.0007	200 (a)	1440 (a)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.333 U							
2-Methylnaphthalene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Acenaphthene	29000	570	20	--	--	--	41,000	16,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Anthracene	100,000	12,000	--	--	--	--	--	90,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Benzo(a)anthracene	2.1	2	--	--	--	--	2.7	21	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.179							
Benzo(a)pyrene	0.21	8	--	125	--	--	0.27	2.1	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.269							
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.331							
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.228							
Benzo(k)fluoranthene	21	49	--	--	--	--	27	210	5900	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0957							
bis(2-Ethylhexyl)phthalate	120	3600 (c)	--	1020	4.5	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Butylbenzylphthalate	100,000	930	--	1020 (d)	4.5 (d)	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Carbazole	86	0.6	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.211							
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Dibenzofuran	1600	--	--	0.002	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Diethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Dimethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Di-n-Butylphthalate	62,000	2300	200	30,000	0.45	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Di-n-Octylphthalate	25,000	10,000	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.399							
Fluorene	26,000	560	--	--	30	--	35,000	12,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Hexachlorobenzene	120	0.5	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.133 U							
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.168							
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	0.0667 U							
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.333 U							
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.143							
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.58							
SEMIVOLATILES (mg/kg)																											
EPA Method SW8270S/M																											
Acenaphthene	29,000	570	20	--	--	--	41,000	16,000	--	--	--	NA	NA	0.00667 UJ	NA	NA	0.0933	0.008	NA	NA							
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	0.00667 UJ	NA	NA	1.06	0.194	NA	NA							
Anthracene	100,000	12,000	--	--	--	--	--	90,000	--	--	--	NA	NA	0.00667 UJ	NA	NA	1.16	0.12	NA	NA							
Benzo(a)anthracene	2.1	2	--	--	--	--	2.7	21	590	--	--	NA	NA	0.0727 J	NA	NA	11.1	0.507	NA	NA							
Benzo(a)pyrene	0.21	8	--	125	--	--	0.27	2.1	59	--	--	NA	NA	0.106 J	NA	NA	16.8	1.06	NA	NA							
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	NA	NA	0.193 J	NA	NA	19.8	2.07	NA	NA							
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	0.094 J	NA	NA	6	0.837	NA	NA							
Benzo(k)fluoranthene	21	49	--	--	--	--	27	210	5900	--	--	NA	NA	0.0447 J	NA	NA	5.95	0.688	NA	NA							
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	--	NA	NA	0.0873 J	NA	NA	12.3	0.787	NA	NA							
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	--	NA	NA	0.0227 J	NA	NA	1.23	0.167	NA	NA							
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	--	NA	NA	0.168 J	NA	NA	23.5	1.28	NA	NA							
Fluorene	26,000	560	--	--	30	--	35,000	12,000	--	--	--	NA	NA	0.00667 UJ	NA	NA	0.178	0.01	NA	NA							
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	--	NA	NA	0.086 J	NA	NA	5.28	0.762	NA	NA							
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	15	NA	NA	0.00667 UJ	NA	NA	0.127	0.088	NA	NA							
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	NA	NA	0.0433 J	NA	NA	6.23	0.285	NA	NA							
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	--	NA	NA	0.177 J	NA	NA	34.1	2.27	NA	NA							
CHLORINATED PHENOLS (mg/kg)																											
Method 8040/8270S/M																											
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA							

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	
	EPA Region 9 PRGs Industrial DAF=20 Plants Mammals Birds Inverts					Risk-Based Concentrations					BT-07 (0-0.5) 0207040-22 7/8/2002	BT-12 (0-0.5) Dup of BT-07 (0-0.5) 0207040-33 7/8/2002	BT-08 (0-0.5) 0207040-27 7/8/2002	BT-09 (0-0.5) 0207059-06 7/9/2002	BT-10 (0-0.5) 0207059-01 7/9/2002	G27-4 (0-0.5) 0309196-16 9/29/2003	G27-5 (0-0.5) 0309196-17 9/29/2003	LW41S (0-0.5) 0410156-02 10/28/2004	
						Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater									
						Occupational	Construction Worker	Excavation Worker	Occupational	Occupational									
VOLATILES (mg/kg) EPA Method SW8260	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromomethane	0.073	--	--	--	--	--	0.033	0.25	7.1	1.7	0.000059	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	64,000	16	--	3250	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	26,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Iodide	70	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	190	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	84	10	3600	--	--	770	710	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9300	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA
Sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	380	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	620	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA
HYDROCARBONS (mg/kg)																			
NWTPH-HCID																			
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	21.9 U	22.2 U	21.8 U	21.6 U	22.0 U	NA	NA	NA
Kerosene	--	--	--	--	--	--	--	--	--	--	--	54.7 U	55.6 U	54.5 U	53.9 U	55.1 U	NA	NA	NA
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	54.7 U	55.6 U	Diesel	53.9 U	55.1 U	NA	NA	NA
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	109 U	111 U	109 U	108 U	110 U	NA	NA	NA
NWTPH-Dx (mg/kg)																			
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	93.4	NA	NA	NA	NA	16.4 U
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	54.5 U	NA	NA	NA	NA	63.3
NWTPH-G (mg/kg)																			
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	2.74 U
PRIORITY POLLUTANT METALS (mg/kg)																			
Arsenic (7060)	1.6 (h)	29	10 (f)	29 (i)	10 (f)	60 (f)	5 (f)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	1.52 U
Chromium (6310)	450	38	1 (h)(k)	340,000 (h)	4 (h)(k)	0.4 (h)(k)	23.1	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	14.2
Copper (6010)	41,000	--	100	300	190	50	19.1	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	23.9
Lead (7421)	800	--	50	4000	16	500	9	750	750	750	30	NA	NA	NA	NA	NA	NA	NA	1.62 U
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	37.2
Zinc (6810)	100,000	12,000	50 (f)	20,000	60 (h)	200	60.2	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	74
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	310	--	0.3	79	1.5	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

												0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
SCREENING CRITERIA																			
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs		Oregon SLVs			Background	Risk-Based Concentrations					BT-07 (0-0.5) 0207040-22 7/8/2002	BT-12 (0-0.5) Dup of BT-07 (0-0.5) 0207040-33 7/8/2002	BT-08 (0-0.5) 0207040-27 7/8/2002	BT-09 (0-0.5) 0207059-06 7/9/2002	BT-10 (0-0.5) 0207059-01 7/9/2002	G27-4 (0-0.5) 0309196-16 9/29/2003	G27-5 (0-0.5) 0309196-17 9/29/2003	LW41S (0-0.5) 0410156-02 10/28/2004
							Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater								
	Industrial	DAF=20	Plants	Mammals	Birds		Inverts	Occupational	Construction Worker	Excavation Worker	Occupational								
BETX (mg/kg)																			
EPA Method SW8021B																			
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (g)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																			
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification Laboratory Identification Date Collected	SCREENING CRITERIA											0-0.5	0-0.5	0-0.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5					
	EPA Region 9 PRGs			Oregon SLVs				Background		Risk-Based Concentrations						COMP	COMP	COMP	COMP	COMP				
	Industrial		DAFs=20	Plants	Mammals	Birds	Inverts			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater				G21 (1-1.5)	G22 (1-1.5)	G23 (1-1.5)	G24 (1-1.5)	G25 (1-1.5)				
								Occupational	Worker	Excavation Worker	Occupational	Occupational	LW42S (0-0.5)	LW43S (0-0.5)	LW44S (0-0.5)	0410156-06	0410156-10	0410156-14	0108208-19	0108215-06	0108215-02	0108208-07	0108215-10	0108215-10
													10/28/2004	10/28/2004	10/28/2004	8/28/2001	8/28/2001	8/29/2001	8/28/2001	8/29/2001	8/28/2001	8/29/2001	8/29/2001	
BETX (mg/kg)																								
EPA Method SW8021B																								
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	200	13	--	3300 (f)	--	--	--	174,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	420	210	--	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Xylene	420 (g)	210 (g)	1	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																								
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

1-1.5 1-1.5 1-1.5 1-1.5 1-1.5 1-1.5 1-1.5

7/19/05 \\Edmdata\wproc\231\009\132\PhIII BI 071905\PhIII BI Bot App C BTTF 0-3

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	
	EPA Region 9 PRGs					Background	Risk-Based Concentrations					COMP	COMP	COMP	BT-01 (1-2)	BT-02 (1-2)	BT-03 (1-2)	BT-11(1-2)	
	Oregon SLVs						Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater	G26 (1-1.5)	G27 (1-1.5)	BA14 (1-1.5)	0207040-02	0207040-09	0207040-14	Dup of BT-03 (1-2)	
	Plants Mammals Birds Inverts						Occupational	Construction Worker	Excavation Worker	Occupational	Occupational	0108215-14	0108208-11	0108208-14	7/8/2002	7/8/2002	7/8/2002	0207040-07	
	Industrial	DAF=20										8/29/2001	8/28/2001	8/28/2001				7/8/2002	
BETX (mg/kg)																			
EPA Method SW8021B																			
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	
Xylenes, Total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	
o-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	
DIOXINS AND FURANS (ng/kg)																			
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5				
	EPA Region 9 PRGs Industrial DAF-20		Oregon SLVs Plants Mammals Birds Inverts				Background	Risk-Based Concentrations			Volatilization to Outdoor Air	Leaching to Groundwater	BT-05 (1-2) 0207040-18 7/8/2002	BT-06 (1-2) 0207059-14 7/9/2002	BT-13 (1-2) Dup of BT-05 (1-2) 0207059-12 7/9/2002	BT-07 (1-2) 0207040-23 7/8/2002	BT-12 (1-2) Dup of BT-07 (1-2) 0207040-34 7/8/2002	BT-08 (1-2) 0207040-28 7/8/2002	BT-09 (1-2) 0207059-07 7/9/2002	BT-10 (1-2) 0207059-02 7/9/2002	
								Soil Ingestion, Dermal Contact, and Inhalation													
								Occupational	Construction Worker	Excavation Worker											Occupational
SEMIVOLATILES (mg/kg) EPA Method SW8270	620	0.0007	200 (a)	1440 (a)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	29000	570	20	--	--	--	41,000	16,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	100,000	12,000	--	--	--	--	--	90,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	2.1	2	--	--	--	--	2.7	21	590	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.21	8	--	125	--	--	0.27	2.1	59	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	21	49	--	--	--	--	2.7	210	5900	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	120	3600 (c)	--	1020	4.5	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzophthalate	100,000	930	--	1020 (d)	4.5 (d)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	88	0.6	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	1600	--	--	0.002	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	62,000	2300	200	30,000	0.45	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	25,000	10,000	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	26,000	560	--	--	30	--	35,000	12,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	120	0.5	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	15	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (mg/kg) EPA Method SW8270SIM	29,000	570	20	--	--	--	41,000	16,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	100,000	12,000	--	--	--	--	--	90,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	2.1	2	--	--	--	--	2.7	21	590	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.21	8	--	125	--	--	0.27	2.1	59	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	2.1	5	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	21	49	--	--	--	--	2.7	210	5900	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	210	160	--	--	--	--	270	2100	59,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	26,000	560	--	--	30	--	35,000	12,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	15	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORINATED PHENOLS (mg/kg) Method 8040/8270SIM	9.0	0.03	3	30	--	4	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	
	EPA Region 9 PRGs		Oregon SLVs				Background	Risk-Based Concentrations			BT-05 (1-2) 0207040-18 7/8/2002	BT-06 (1-2) 0207059-14 7/9/2002	BT-13 (1-2) Dup of BT-06 (1-2) 0207059-12 7/9/2002	BT-07 (1-2) 0207040-23 7/8/2002	BT-12 (1-2) Dup of BT-07 (1-2) 0207040-34 7/8/2002	BT-08 (1-2) 0207040-28 7/8/2002	BT-09 (1-2) 0207059-07 7/9/2002	BT-10 (1-2) 0207059-02 7/9/2002
								Soil Ingestion, Dermal Contact, and Inhalation										
	Industrial	DAF-20	Plants	Mammals	Birds	Inverts	Occupational	Construction Worker	Excavation Worker	Occupational	Occupational							
VOLATILES (mg/kg)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromethane	0.075	--	--	--	--	--	0.033	0.25	7.1	1.7	0.000059	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	NA	NA	NA	NA	NA	NA	NA
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Acetone	54,000	16	--	1250	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA
Methyl Iodide	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA
Naphthalene	150	34	10	3900	--	--	770	710	20,000	--	19	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9300	--	--	--	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA
HYDROCARBONS (mg/kg)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	22.4 U	22.2 U	22.2 U	21.6 U	22.2 U	21.7 U	22.2 U
Kerosene	--	--	--	--	--	--	--	--	--	--	--	56.1 U	55.6 U	55.6 U	54.1 U	55.6 U	54.2 U	54.3 U
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	56.1 U	55.6 U	55.6 U	54.1 U	55.6 U	54.2 U	54.3 U
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	112 U	111 U	111 U	108 U	111 U	109 U	111 U
NWTPH-Dx (mg/kg)																		
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																		
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/kg)																		
Arsenic (7050)	1.6 (h)	29	10 (j)	29 (j)	10 (j)	60 (j)	5 (j)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	450	38	1 (h)(k)	340,000 (d)	4 (h)(k)	0.4 (h)(k)	23.1	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Lead (7421)	800	--	50	4000	16	500	9	750	750	750	30	NA	NA	NA	NA	NA	NA	NA
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	100,000	12,000	50 (f)	20,000	60 (h)	200	80.2	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)	450	6	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	310	--	0.3	73	1.5	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA

BZTO104(e)023415

BZTO104(e)023416

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

SCREENING CRITERIA											1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5		
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs		Oregon SLVs				Background	Risk-Based Concentrations					BT-05 (1-2) 0207040-18 7/8/2002	BT-06 (1-2) 0207059-14 7/9/2002	BT-13 (1-2) Dup of BT-06 (1-2) 0207059-12 7/9/2002	BT-07 (1-2) 0207040-23 7/8/2002	BT-12 (1-2) Dup of BT-07 (1-2) 0207040-34 7/8/2002	BT-08 (1-2) 0207040-28 7/8/2002	BT-09 (1-2) 0207059-07 7/9/2002	BT-10 (1-2) 0207059-02 7/9/2002
								Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater								
	Industrial	DAF=20	Plants	Mammals	Birds	Inverts		Occupational	Construction Worker	Excavation Worker	Occupational	Occupational								
BETX (mg/kg)																				
EPA Method SW8021B																				
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	420	210	--	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																				
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

SCREENING CRITERIA												1-1.5' 1-1.5' 1-1.5' 1-1.5'											
Sample Identification: Laboratory Identification: Date Collected:		EPA Region 9 PRGs Industrial DAF=20 Plants Mammals Birds Inverts				Oregon SLVs				Background	Risk-Based Concentrations					LW41S (1-1.5) 0410156-03 10/28/2004	LW42S (1-1.5) 0410156-07 10/28/2004	LW43S (1-1.5) 0410156-11 10/28/2004	LW44S (1-1.5) 0410156-15 10/28/2004				
											Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater								
											Occupational	Construction Worker	Excavation Worker	Occupational	Occupational								
SEMIVOLATILES (mg/kg) EPA Method SW8270																							
2,6-Dinitrotoluene	620	0.0007	200 (a)	1440 (a)	--	--	--	--	--	--	--	--	--	0.333 U	0.333 U	0.333 U	0.333 U						
2-Methylnaphthalene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	0.0667 U	0.0667 U	0.0667 U	0.0667 U						
Acenaphthene	29000	570	20	--	--	--	--	41,000	16,000	--	--	--	--	0.0667 U	0.067	0.0667 U	0.0667 U						
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	0.0667 U	0.368	0.0667 U	0.0667 U						
Anthracene	100,000	12,000	--	--	--	--	--	--	90,000	--	--	--	--	0.0667 U	0.471	0.0667 U	0.0667 U						
Benzo(a)anthracene	2.1	2	--	--	--	--	--	2.7	2.1	590	--	--	--	0.0667 U	3.18	0.0667 U	0.0667 U						
Benzo(a)pyrene	0.21	8	--	125	--	--	--	0.27	2.1	59	--	--	--	0.0667 U	5.01	0.0667 U	0.0667 U						
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	--	--	0.0667 U	5.82	0.0667 U	0.0667 U						
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	0.0667 U	2.2	0.0667 U	0.0667 U						
Benzo(k)fluoranthene	21	49	--	--	--	--	--	27	210	5900	--	--	--	0.0667 U	1.55	0.0667 U	0.0667 U						
bis(2-Ethylhexyl)phthalate	120	3600 (c)	--	1020	4.5	--	--	--	--	--	--	--	--	0.0667 U	0.0667 U	0.0667 U	0.0667 U						
Butylbenzylphthalate	100,000	330	--	1020 (d)	4.5 (d)	--	--	--	--	--	--	--	--	0.0667 U	0.0667 U	0.0667 U	0.0667 U						
Carbazole	86	0.6	--	--	--	--	--	--	--	--	--	--	--	0.0667 U	0.0817	0.0667 U	0.0667 U						
Chrysene	210	160	--	--	--	--	--	270	2100	59,000	--	--	--	0.0667 U	1.09	0.0667 U	0.0667 U						
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	--	0.27	2.1	59	--	--	--	0.0667 U	0.479	0.0667 U	0.0667 U						
Dibenzofuran	1600	--	--	0.002	--	--	--	--	--	--	--	--	--	0.0667 U	0.0667 U	0.0667 U	0.0667 U						
Diethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	--	--	0.0667 U	0.0667 U	0.0667 U	0.0667 U						
Dimethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	--	--	0.0667 U	0.0667 U	0.0667 U	0.0667 U						
Di-n-Butylphthalate	62,000	2300	200	30,000	0.45	--	--	--	--	--	--	--	--	0.0667 U	0.0667 U	0.0667 U	0.0667 U						
Di-n-Octylphthalate	25,000	10,000	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	--	--	0.0667 U	0.0667 U	0.0667 U	0.0667 U						
Fluoranthene	22,000	4300	--	--	--	--	--	29,000	8900	--	--	--	--	0.0877	9.8	0.0667 U	0.0667 U						
Fluorene	26,000	560	--	--	--	30	--	35,000	12,000	--	--	--	--	0.0667 U	0.129	0.0667 U	0.0667 U						
Hexachloroethane	120	0.5	--	--	--	--	--	--	--	--	--	--	--	0.133 U	0.133 U	0.133 U	0.133 U						
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	--	2.7	21	590	--	--	--	0.0667 U	1.84	0.0667 U	0.0667 U						
Naphthalene	190	84	10	3900	--	--	--	770	710	20,000	--	15	--	0.0667 U	0.0667 U	0.0667 U	0.0667 U						
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	--	--	0.333 U	0.333 U	0.333 U	0.333 U						
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	--	--	0.0667 U	2.7	0.0667 U	0.0667 U						
Pyrene	29,000	4200	--	--	--	--	--	21,000	6700	--	--	--	--	0.101	11.1	0.0667 U	0.0667 U						
SEMIVOLATILES (mg/kg) EPA Method SW8270SIM																							
Acenaphthene	29,000	570	20	--	--	--	--	41,000	16,000	--	--	--	--	NA	NA	NA	NA						
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA						
Anthracene	100,000	12,000	--	--	--	--	--	--	90,000	--	--	--	--	NA	NA	NA	NA						
Benzo(a)anthracene	2.1	2	--	--	--	--	--	2.7	2.1	590	--	--	--	NA	NA	NA	NA						
Benzo(a)pyrene	0.21	8	--	125	--	--	--	0.27	2.1	59	--	--	--	NA	NA	NA	NA						
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA						
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA						
Benzo(k)fluoranthene	21	49	--	--	--	--	--	27	210	5900	--	--	--	NA	NA	NA	NA						
Chrysene	210	160	--	--	--	--	--	270	2100	59,000	--	--	--	NA	NA	NA	NA						
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	--	0.27	2.1	59	--	--	--	NA	NA	NA	NA						
Fluoranthene	22,000	4300	--	--	--	--	--	29,000	8900	--	--	--	--	NA	NA	NA	NA						
Fluorene	26,000	560	--	--	--	30	--	35,000	12,000	--	--	--	--	NA	NA	NA	NA						
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	--	2.7	21	590	--	--	--	NA	NA	NA	NA						
Naphthalene	190	84	10	3900	--	--	--	770	710	20,000	--	15	--	NA	NA	NA	NA						
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA						
Pyrene	29,000	4200	--	--	--	--	--	21,000	6700	--	--	--	--	NA	NA	NA	NA						
CHLORINATED PHENOLS (mg/kg) Method 8040/8270SIM																							
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	--	--	NA	NA	NA	NA						

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										1-1.5				
	EPA Region 9 PRGs		Oregon SLVs			Background	Risk-Based Concentrations					LW41S (1-1.5) 0410156-03 10/28/2004	LW42S (1-1.5) 0410156-07 10/28/2004	LW43S (1-1.5) 0410156-11 10/28/2004	LW44S (1-1.5) 0410156-15 10/28/2004
							Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater				
							Occupational	Construction Worker	Excavation Worker	Occupational	Occupational				
VOLATILES (mg/kg)															
EPA Method SW8260															
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	NA	NA	0.01 UJ	0.01 UJ
1,2-Dibromomethane	0.073	--	--	--	--	--	0.033	0.25	7.1	1.7	0.00059	NA	NA	0.01 UJ	0.01 UJ
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	NA	NA	0.01 UJ	0.01 UJ
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	NA	NA	0.04 UJ	0.04 UJ
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	NA	NA	0.01 UJ	0.01 UJ
Azorene	54,000	16	--	1250	--	--	--	--	--	--	--	NA	NA	0.1 UJ	0.1 UJ
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	0.01 UJ	0.01 UJ
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	NA	NA	0.01 UJ	0.01 UJ
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	0.01 UJ	0.01 UJ
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	NA	NA	0.01 UJ	0.01 UJ
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	0.02 UJ	0.02 UJ
Methyl Isobutyl	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	0.01 UJ	0.01 UJ
Naphthalene	130	34	10	3900	2	--	770	710	20,000	--	16	NA	NA	0.01 UJ	0.01 UJ
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	0.01 UJ	0.01 UJ
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9300	--	--	--	NA	NA	0.01 UJ	0.01 UJ
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	0.01 UJ	0.01 UJ
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	0.01 UJ	0.01 UJ
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	0.01 UJ	0.01 UJ
Toluene	520	12	200	1440	--	--	88,000	30,000	--	--	180	NA	NA	0.01 UJ	0.01 UJ
HYDROCARBONS (mg/kg)															
NWTPH-HCID															
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA
Kerosene	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA
NWTPH-Dx (mg/kg)															
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	16.5 U	56	38.5	16.7 U
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	54.8 U	221	56.6 U	55.5 U
NWTPH-G (mg/kg)															
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	2.74 U	2.84 U	3.54	8.44
PRIORITY POLLUTANT METALS (mg/kg)															
Arsenic (7060)	1.6 (h)	29	10 (i)	29 (i)	10 (i)	60 (i)	5 (j)	--	--	--	--	1.72 U	1.52 U	1.56 U	1.72 U
Chromium (6010)	450	38	1 (h)(k)	340,000 (k)	4 (h)(k)	0.4 (h)(k)	23.1	--	--	--	--	14.7	26.3	29.2	14.3
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	11.7	21.7	19.3	11.8
Lead (7421)	800	--	50	4000	16	500	9	750	750	750	30	1.72 U	33	16.5	1.72 U
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	16.4	18.3	18.5	15
Zinc (6010)	160,000	12,000	50 (h)	20,000	60 (h)	200	60.2	--	--	--	--	46.2	106	91.3	49.3
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA
Mercury (7471)	310	--	0.3	73	1.6	0.1	--	--	--	--	--	NA	NA	NA	NA

TABLE C-2a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (0-3 FT)
PHASE III RI

											1-1.5	1-1.5	1-1.5	1-1.5	
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA														
	EPA Region 9 PRGs		Oregon SLVs				Background	Risk-Based Concentrations			LW41S (1-1.5) 0410156-03 10/28/2004	LW42S (1-1.5) 0410156-07 10/28/2004	LW43S (1-1.5) 0410156-11 10/28/2004	LW44S (1-1.5) 0410156-15 10/28/2004	
								Soil Ingestion, Dermal Contact, and Inhalation		Volatilization to Outdoor Air					Leaching to Groundwater
			Construction Worker	Excavation Worker											
	Occupational	Occupational	Occupational	Occupational											
BETX (mg/kg)															
EPA Method SW8021B															
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (l)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA
Xylenes, Total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)															
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA

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TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

						5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	CF	CF	
SCREENING CRITERIA																		COMP	COMP
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			BT-01 (5-6) 0207040-03 7/8/2002	BT-02 (5-6) 0207040-010 7/8/2002	BT-03 (5-6) 0207040-15 7/8/2002	BT-04 (5-6) 0207059-20 7/9/2002	BT-05 (5-6) 0207040-19 7/8/2002	BT-06 (5-6) 0207059-15 7/9/2002	BT-07 (5-6) 0207040-24 7/8/2002	BT-08 (5-6) 0207040-29 7/8/2002	BT-09 (5-6) 0207059-08 7/9/2002	BT-10 (5-6) 0207059-03 7/9/2002	LW42S (5-5.5) 0410156-08 10/28/2004	G21 (14-17.5) 0108206-21 8/28/2001	G22 (12.5-15.5) 0108215-08 8/29/2001	
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater														
			Excavation Worker	Occupational	Occupational														
VOLATILES (mg/kg)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 U	0.079 J	
1,2-Dibromomethane	--	--	7.1	1.7	0.000059	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 U	0.001 U	
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 U	0.0283 J	
2-Butanone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	0.005 U	
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 U	0.0237	
Acetone	16	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 U	0.005 U	
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 U	0.001 U	
Carbon Disulfide	32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 U	0.001 U	
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00960	0.001 U	
Isopropylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.158	0.027 J	
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00832	0.00361 J	
Methyl iodide	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 U	0.001 U	
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	64	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0302	3.420	
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.990	0.089 J	
n-Propylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.742	0.0581 J	
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 U	0.001 U	
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.684	0.103 J	
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0216	0.00764 J	
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.00822	0.00221	
HYDROCARBONS (mg/kg)																			
NWTPH-HCID																			
Gasoline	--	--	--	80,000	110	21.9 U	22.1 U	22.0 U	22.2 U	21.9 U	22.2 U	21.7 U	21.8 U	22.1 U	21.8 U	NA	Gasoline	23.5 U	
Kerosene	--	--	--	--	--	54.8 U	55.1 U	54.9 U	55.6 U	54.8 U	55.4 U	54.2 U	54.5 U	55.3 U	54.4 U	NA	61.0 U	58.8 U	
Diesel	--	--	--	--	--	54.8 U	55.1 U	54.9 U	55.6 U	54.8 U	55.4 U	54.2 U	54.5 U	55.3 U	54.4 U	NA	Diesel	Diesel	
Lube Oil	--	--	--	--	--	110 U	110 U	110 U	111 U	110 U	111 U	108 U	109 U	111 U	109 U	NA	122 U	118 U	
NWTPH-Dx (mg/kg)																			
TPH-Diesel Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	16.5 U	1120	6580 J	
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
TPH-Motor Oil Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	55 U	61.0 U	58.8 U	
NWTPH-G (mg/kg)																			
TPH-Gasoline Range	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	162	NA	
PRIORITY POLLUTANT METALS (mg/kg)																			
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	2.29	1.5 U	
Chromium (6010)	38	23.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.5	13.7	
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	12.2	12.5	
Lead (7421)	--	9	750	--	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	136 U	132 U	
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	14.7	15.8	
Zinc (6010)	12,000	602	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	43.0	40.8	
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

						5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	CF	CF	
SCREENING CRITERIA																			
Risk-Based Concentrations																		COMP	COMP
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs	Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	BT-01 (5-6)	BT-02 (5-6)	BT-03 (5-6)	BT-04 (5-6)	BT-05 (5-6)	BT-06 (5-6)	BT-07 (5-6)	BT-08 (5-6)	BT-09 (5-6)	BT-10 (5-6)	LW42S (5-5.5)			
			Excavation	Occupational	Occupational	0207040-03	0207040-010	0207040-15	0207059-20	0207040-19	0207059-15	0207040-24	0207040-29	0207059-08	0207059-03	0410156-08	0108208-21	0108215-08	
			Worker	Occupational	Occupational	7/8/2002	7/8/2002	7/8/2002	7/9/2002	7/8/2002	7/9/2002	7/8/2002	7/8/2002	7/9/2002	7/9/2002	10/28/2004	8/29/2001	8/29/2001	
BETX (mg/kg)																			
EPA Method SW8021B																			
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
DIOXINS AND FURANS (ng/kg)																			
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

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TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF-20	Background	SCREENING CRITERIA				CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
			Risk-Based Concentrations				COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational
			Excavation Worker	Occupational	Occupational		G23 (9-14) 0108215-04 8/29/2001	G24 (9-15) 0108209-09 8/28/2001	G25 (14-17) 0108215-12 8/29/2001	G26 (14-15) 0108215-16 8/29/2001	G27 (13-15) 0108209-13 8/28/2001	BA14 (14-15) 0108208-16 8/28/2001	SCH56 (9-10) 0110086-01 10/9/2001	SCH56 (15-15.5) 0110065-3 10/9/2001	SCH56 (17-18) 0110066-02 10/9/2001	SCH59 (14-18) 0110066-03 10/9/2001	SCH61 (15.6-16.4) 0110065-1 10/9/2001	SCH63 (15.7-16.0) 0110065-2 10/9/2001
VOLATILES (mg/kg)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	--	--	40,000	790	55		0.001 U	0.00274	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.133 J	NA	0.00618 J	5.94 J	0.0104
1,2-Dibromoethane	--	--	7.1	1.7	0.000059		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.01 U	NA	0.002 U	0.002 U	0.002 U
1,3,5-Trimethylbenzene	--	--	40,000	--	12		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.1 U	NA	0.002 U	3.83 J	0.00682
2-Butanone	--	--	--	--	--		0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	0.005 U	NA	0.005 U	0.005 U	0.005 U
4-Isopropyltoluene	12 (a)	--	--	--	--		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.24 J	NA	0.002 U	0.552 J	0.001 U
Acetone	16	--	--	--	--		0.005 U	0.00792	0.005 U	0.005 U	0.023	0.005 U	NA	0.0351 J	NA	0.0212 U	0.005 U	0.0974
Benzene	0.03	--	9400	48	0.052		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	NA	0.001 U	0.001 U	0.001 U
Carbon Disulfide	32	--	--	--	--		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	NA	0.001 U	0.001 U	0.001 U
Ethylbenzene	13	--	--	--	--		0.0256 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.01 U	NA	0.00538 J	0.0388 J	0.00916
Isopropylbenzene	--	--	--	--	--		4.350 J	0.001 U	0.001 U	0.001 U	0.0288	0.001 U	NA	5.5 J	NA	2.16 J	0.866 J	0.231
m,p-Xylene	210 (g)	--	--	--	--		0.023 J	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	NA	0.02 U	NA	0.0148 J	0.0503 J	0.0282
Methyl Iodide	--	--	--	--	--		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.001 U	NA	0.001 U	0.00896 J	0.001 U
Methyl tert-butyl ether	--	--	--	720	0.30		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15		0.0173 J	0.010 U	0.010 U	0.010 U	0.0753	0.010 U	NA	21.8 J	NA	0.0569 J	3.57 J	0.0263
n-Butylbenzene	--	--	--	--	--		5.740 J	0.002 U	0.002 U	0.002 U	0.101	0.004 U	NA	7.56 J	NA	7.22 J	2.94 J	5.44
n-Propylbenzene	--	--	--	--	--		8.170 J	0.001 U	0.001 U	0.001 U	0.0695	0.001 U	NA	28.3 J	NA	7.5 J	3.54 J	4.74
o-Xylene	210 (g)	--	--	--	100 (g)		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.01 U	NA	0.002 U	0.002 U	0.002 U
sec-Butylbenzene	--	--	--	--	--		0.001 U	0.001 U	0.001 U	0.001 U	0.0352	0.001 U	NA	4.18 J	NA	3.06 J	1.09 J	2.12
tert-Butylbenzene	--	--	--	--	--		0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.329 J	NA	0.0211 J	0.001 U	0.0108
Toluene	12	--	--	--	180		0.0227 J	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	0.01 U	NA	0.0115 J	0.0172 J	0.00974
HYDROCARBONS (mg/kg)																		
NWTPH-HCID																		
Gasoline	--	--	--	80,000	110		23.0 U	24.4 U	22.7 U	23.5 U	23.3 U	23.0 U	NA	8750 J	NA	NA	3230 J	4620 J
Kerosene	--	--	--	--	--		Kerosene	61.0 U	56.8 U	58.8 U	Kerosene	57.5 U	NA	250 U	NA	NA	60.0 U	60.0 U
Diesel	--	--	--	--	--		57.5 U	61.0 U	56.8 U	58.8 U	58.1 U	57.5 U	NA	13200 J	NA	NA	4270 J	6120 J
Lube Oil	--	--	--	--	--		115 U	122 U	114 U	118 U	116 U	115 U	NA	500 U	NA	NA	100 U	100 U
NWTPH-Dx (mg/kg)																		
TPH-Diesel Range	--	--	--	--	--		17.2 U	NA	NA	NA	17.4 U	NA	17.2 U	12700 J	18.5 U	10200	5650 J	9070 J
TPH-Kerosene Range	--	--	--	--	--		4880	NA	NA	NA	592	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--		57.5 U	NA	NA	NA	58.1 U	NA	57.5 U	275 U	61.7 U	275 U	64.1 U	294 U
NWTPH-G (mg/kg)																		
TPH-Gasoline Range	--	--	--	80,000	110		NA	NA	NA	NA	NA	NA	2.87 U	NA	3.09 U	1410	NA	NA
PRIORITY POLLUTANT																		
METALS (mg/kg)																		
Arsenic (7060)	29	5 (j)	--	--	--		2.68	2.44	2.23	2.39	2.08	2.44	NA	NA	NA	NA	NA	NA
Chromium (6010)	38	23.1	--	--	--		12.9	14.4	19.4	15.6	13.2	14.5	NA	NA	NA	NA	NA	NA
Copper (6010)	--	19.1	--	--	--		16.0	13.2	13.1	13.6	12.2	12.6	NA	NA	NA	NA	NA	NA
Lead (7481)	--	6	750	--	30		1.75 U	1.69 U	1.75 U	1.89 U	1.92 U	1.85 U	NA	NA	NA	NA	NA	NA
Nickel (6010)	130	21.4	--	--	--		14.7	16.7	19.4	15.8	15.3	16.6	NA	NA	NA	NA	NA	NA
Zinc (6010)	12,000	60.2	--	--	--		39.8	42.3	47.8	46.1	42.1	44.4	NA	NA	NA	NA	NA	NA
Cadmium (6010)	8	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7481)	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA					COMP	COMP	COMP	COMP	COMP	COMP	SCH56 (9-10)	SCH56 (15-15.5)	SCH58 (17-18)	SCH59 (14-18)	SCH61 (15.6-16.4)	SCH63 (15.7-16.0)
	EPA Region 9 PRGs	Background	Risk-Based Concentrations														
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation	Occupational	Occupational												
			Worker	Occupational	Occupational												
G23 (9-14)	G24 (9-15)	G25 (14-17)	G26 (14-15)	G27 (13-15)	BA14 (14-15)	0108215-04 8/29/2001	0108208-09 8/28/2001	0103215-12 8/29/2001	0108215-16 8/29/2001	0108208-13 8/28/2001	0108208-16 8/28/2001	0110066-01 10/9/2001	0110065-3 10/9/2001	0110066-02 10/9/2001	0110066-03 10/9/2001	0110065-1 10/9/2001	0110065-2 10/9/2001
BETX (mg/kg)																	
EPA Method SW8021B																	
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																	
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			BT-01 (9-10) 0207040-04 7/8/2002	BT-01 (13.5-14.5) 0207040-05 7/8/2002	BT-02 (9-10) 0207040-11 7/8/2002	BT-02 (14-15) 0207040-012 7/8/2002	BT-03 (9-10) 0207040-16 7/8/2002	BT-04 (9-10) 0207059-21 7/9/2002	BT-04 (12.5-13.5) 0207059-22 7/9/2002	BT-05 (9-10) 0207040-20 7/8/2002	BT-05 (14-15) 0207040-21 7/8/2002	BT-06 (9-10) 0207059-16 7/9/2002	BT-06 (14-15) 0207059-17 7/9/2002
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational											
SEMIVOLATILES (mg/kg)																
EPA Method SW8270																
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	570	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	930	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	0.6	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	2300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octyl phthalate	10,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	560	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	0.5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (mg/kg)																
EPA Method SW8270SIM																
Acenaphthene	570	--	--	--	--	NA	0.0067 U	NA	NA	NA	0.00667 UJ	NA	NA	0.927 J	NA	0.028
Acenaphthylene	84 (b)	--	--	--	--	NA	0.0067 U	NA	NA	NA	0.00667 UJ	NA	NA	0.487 J	NA	0.0313
Anthracene	12,000	--	--	--	--	NA	0.0067 U	NA	NA	NA	0.00667 UJ	NA	NA	0.267 J	NA	0.00667 U
Benzo(a)anthracene	2	--	590	--	--	NA	0.0067 U	NA	NA	NA	0.0207 J	NA	NA	0.00733 J	NA	0.00667 U
Benzo(a)pyrene	8	--	59	--	--	NA	0.0067 U	NA	NA	NA	0.036 J	NA	NA	0.00667 UJ	NA	0.00667 U
Benzo(b)fluoranthene	5	--	--	--	--	NA	0.0067 U	NA	NA	NA	0.036 J	NA	NA	0.00667 UJ	NA	0.00667 U
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	0.0067 U	NA	NA	NA	0.036 J	NA	NA	0.00667 UJ	NA	0.00667 U
Benzo(k)fluoranthene	49	--	5900	--	--	NA	0.0067 U	NA	NA	NA	0.0147 J	NA	NA	0.00667 UJ	NA	0.00667 U
Chrysene	160	--	59,000	--	--	NA	0.0067 U	NA	NA	NA	0.024 J	NA	NA	0.014 J	NA	0.00667 U
Dibenz(a,h)anthracene	2	--	59	--	--	NA	0.0067 U	NA	NA	NA	0.0107 J	NA	NA	0.00667 UJ	NA	0.00667 U
Fluoranthene	4300	--	--	--	--	NA	0.0067 U	NA	NA	NA	0.0293 J	NA	NA	0.113 J	NA	0.00667 U
Fluorene	560	--	--	--	--	NA	0.0067 U	NA	NA	NA	0.00667 UJ	NA	NA	2.39 J	NA	0.0873
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	0.0067 U	NA	NA	NA	0.03 J	NA	NA	0.00667 UJ	NA	0.00667 U
Naphthalene	84	--	20,000	--	15	NA	0.0067 U	NA	NA	NA	0.00667 UJ	NA	NA	0.407 UJ	NA	0.239
Phenanthrene	84 (b)	--	--	--	--	NA	0.0067 U	NA	NA	NA	0.00867 J	NA	NA	4.78 J	NA	0.028
Pyrene	4200	--	--	--	--	NA	0.0067 U	NA	NA	NA	0.0707 J	NA	NA	0.107 J	NA	0.00667 U
CHLORINATED PHENOLS (mg/kg)																
Method 8040/8270SIM																
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs	Background	Risk-Based Concentrations			BT-01 (9-10) 0207040-04 7/8/2002	BT-01 (13.5-14.5) 0207040-05 7/8/2002	BT-02 (9-10) 0207040-11 7/8/2002	BT-02 (14-15) 0207040-012 7/8/2002	BT-03 (9-10) 0207040-16 7/8/2002	BT-04 (9-10) 0207059-21 7/9/2002	BT-04 (12.5-13.5) 0207059-22 7/9/2002	BT-05 (9-10) 0207040-20 7/8/2002	BT-05 (14-15) 0207040-21 7/8/2002	BT-06 (9-10) 0207059-16 7/9/2002	BT-06 (14-15) 0207059-17 7/9/2002
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational											
VOLATILES (mg/kg)																
EPA Method SW8260																
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromodifluorethane	--	--	7.1	1.7	0.000059	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	16	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Iodide	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HYDROCARBONS (mg/kg)																
NWTPH-HCID																
Gasoline	--	--	--	80,000	110	22.9 U	NA	22.4 U	24.1 U	22.2 U	22.4 U	23.0 U	22.4 U	NA	22.4 U	NA
Kerosene	--	--	--	--	--	57.3 U	NA	55.9 U	60.2 U	56.5 U	56.0 U	57.5 U	55.9 U	NA	55.9 U	NA
Diesel	--	--	--	--	--	57.3 U	NA	55.9 U	60.2 U	55.5 U	Diesel	57.5 U	55.9 U	NA	55.9 U	NA
Lube Oil	--	--	--	--	--	115 U	NA	112 U	120 U	111 U	Lube Oil	115 U	112 U	NA	112 U	NA
NWTPH-Dx (mg/kg)																
TPH-Diesel Range	--	--	--	--	--	NA	301	NA	NA	NA	115	NA	NA	6200	NA	198
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	NA	66.9	NA	NA	NA	1070	NA	NA	99.0	NA	61.0 U
NWTPH-G (mg/kg)																
TPH-Gasoline Range	--	--	--	80,000	110	NA	2.76 U	NA	NA	NA	NA	NA	NA	715	NA	1160
PRIORITY POLLUTANT METALS (mg/kg)																
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	36	33.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (7421)	--	9	750	--	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	12,000	602	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
SCREENING CRITERIA																
		Risk-Based Concentrations														
		Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
Sample Identification:	EPA Region 9		Excavation			BT-01 (9-10)	BT-01 (13.5-14.5)	BT-02 (9-10)	BT-02 (14-15)	BT-03 (9-10)	BT-04 (9-10)	BT-04 (12.5-13.5)	BT-05 (9-10)	BT-05 (14-15)	BT-06 (9-10)	BT-06 (14-15)
Laboratory Identification:	PRGs		Worker	Occupational	Occupational	0207040-04	0207040-05	0207040-11	0207040-012	0207040-16	0207059-21	0207059-22	0207040-20	0207040-21	0207059-16	0207059-17
Date Collected:	DAF=20				7/8/2002	7/8/2002	7/8/2002	7/8/2002	7/8/2002	7/9/2002	7/9/2002	7/8/2002	7/8/2002	7/9/2002	7/9/2002	7/9/2002
BETX (mg/kg)																
EPA Method SW8021B																
Benzene	0.03	--	9400	48	0.052	NA	0.0276 U	NA	NA	NA	NA	NA	NA	0.0275 U	NA	0.0305 U
Ethylbenzene	13	--	--	--	--	NA	0.110 U	NA	NA	NA	NA	NA	NA	0.552	NA	1.33
Toluene	12	--	--	--	180	NA	0.110 U	NA	NA	NA	NA	NA	NA	0.110 U	NA	0.410
Xylenes, Total	210	--	--	--	100	NA	0.331 U	NA	NA	NA	NA	NA	NA	1.02	NA	1.67
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
p-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	
SCREENING CRITERIA																	
		Risk-Based Concentrations															
Sample Identification:		EPA Region 9 PRGs	Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	BT-07 (9-10)	BT-07 (12.5-13.5)	BT-08 (9-10)	BT-08 (13.5-14.5)	BT-09 (9-10)	BT-09 (13.5-14.5)	BT-10 (9-10)	BT-10 (13.5-14.5)	G21-3(13-14)	LW26S (12-13)	LW26S (12-13)
Laboratory Identification:				Excavation Worker	Occupational	Occupational	0207040-25	0207040-26	0207040-30	0207040-31	0207059-09	0207059-10	0207059-04	0207059-05	0207087-01	0309153-02	0310011-05
Date Collected:				DAF=20				7/8/2002	7/8/2002	7/8/2002	7/8/2002	7/8/2002	7/9/2002	7/9/2002	7/9/2002	7/9/2002	7/11/2002
SEMIVOLATILES (mg/kg)																	
EPA Method SW8270																	
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	570	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylbenzylphthalate	930	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	0.6	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	2300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	10,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	560	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	0.5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (mg/kg)																	
EPA Method SW8270SIM																	
Acenaphthene	570	--	--	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Anthracene	12,000	--	--	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Benzo(a)anthracene	2	--	590	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Benzo(a)pyrene	8	--	59	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Benzo(k)fluoranthene	49	--	59,000	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Chrysene	160	--	59,000	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Fluoranthene	4300	--	--	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Fluorene	560	--	--	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Naphthalene	84	--	20,000	--	15	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Phenanthrene	84 (b)	--	--	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
Pyrene	4200	--	--	--	--	NA	NA	NA	0.00667 U	NA	NA	NA	NA	NA	NA	0.00667 U	0.00667 U
CHLORINATED PHENOLS (mg/kg)																	
Method 8040/8270SIM																	
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF						
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			BT-07 (9-10) 0207040-25 7/8/2002	BT-07 (12.5-13.5) 0207040-26 7/8/2002	BT-08 (9-10) 0207040-30 7/8/2002	BT-08 (13.5-14.5) 0207040-31 7/8/2002	BT-09 (9-10) 0207059-09 7/9/2002	BT-09 (13.5-14.5) 0207059-10 7/9/2002	BT-10 (9-10) 0207059-04 7/9/2002	BT-10 (13.5-14.5) 0207059-05 7/9/2002	G21-3(13-14) 0207087-01 7/11/2002	LW28S (12-13) 0309163-02 9/23/2003	LW28S (12-13) 0310011-05 10/1/2003					
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater																
			Excavation Worker	Occupational	Occupational																
VOLATILES (mg/kg)																					
EPA Method SW8260																					
1,2,4-Trimethylbenzene						--	--	40,000	790	55	NA	NA	NA	NA	NA	NA	0.01 U				
1,2-Dibromomethane						--	--	7.1	1.7	0.000059	NA	NA	NA	NA	NA	0.01 U	0.01 U				
1,3,5-Trimethylbenzene						--	--	40,000	--	12	NA	NA	NA	NA	NA	NA	0.01 U				
2-Bulapone						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA				
4-Isopropyltoluene						12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA				
Acetone						16	--	--	--	--	NA	NA	NA	NA	NA	NA	NA				
Benzene						0.03	--	9400	49	0.052	NA	NA	NA	NA	NA	NA	0.01 U				
Carbon Disulfide						32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA				
Ethylbenzene						13	--	--	--	--	NA	NA	NA	NA	NA	NA	0.01 U				
Isopropylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	0.01 U				
m,p-Xylene						210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	0.02 U				
Methyl Iodide						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA				
Methyl tert-butyl ether						--	--	--	720	0.30	NA	NA	NA	NA	NA	10 U	10 U				
Naphthalene						84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA				
n-Butylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA				
n-Propylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	0.01 U				
o-Xylene						210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	0.01 U				
sec-Butylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA				
tert-Butylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA				
Toluene						12	--	--	--	190	NA	NA	NA	NA	NA	NA	0.01 U				
HYDROCARBONS (mg/kg)																					
NWTPH-HCID																					
Gasoline						--	--	--	80,000	110	22.4 U	22.1 U	22.5 U	NA	22.1 U	23.1 U	21.8 U	22.0 U	24.2 U	NA	NA
Kerosene						--	--	--	--	--	55.9 U	55.1 U	56.2 U	NA	55.3 U	57.7 U	54.4 U	54.9 U	60.5 U	NA	NA
Diesel						--	--	--	--	--	55.9 U	55.1 U	56.2 U	NA	55.3 U	57.7 U	54.4 U	54.9 U	60.5 U	NA	NA
Lube Oil						--	--	--	--	--	112 U	110 U	112 U	NA U	111 U	115 U	109 U	110 U	121 U	NA	NA
NWTPH-Dx (mg/kg)																					
TPH-Diesel Range						--	--	--	--	--	NA	NA	NA	17.9 U	NA	NA	NA	NA	NA	17.9 U	18.1 U
TPH-Kerosene Range						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range						--	--	--	--	--	NA	NA	NA	59.7 U	NA	NA	NA	NA	NA	59.7 U	60.5 U
NWTPH-G (mg/kg)																					
TPH-Gasoline Range						--	--	--	80,000	110	NA	NA	NA	2.98 U	NA	NA	NA	NA	NA	2.98 U	3.66
PRIORITY POLLUTANT METALS (mg/kg)																					
Arsenic (7060)						29	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)						98	23.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (6010)						--	19.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (7421)						--	9	750	--	30	NA	NA	NA	NA	NA	NA	NA	NA	1.67 U	2.42 U	2.42 U
Nickel (6010)						130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)						12,000	60.2	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)						8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7474)						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			BT-07 (9-10) 0207040-25 7/8/2002	BT-07 (12.5-13.5) 0207040-26 7/8/2002	BT-08 (9-10) 0207040-30 7/8/2002	BT-08 (13.5-14.5) 0207040-31 7/8/2002	BT-09 (9-10) 0207059-09 7/9/2002	BT-09 (13.5-14.5) 0207059-10 7/9/2002	BT-10 (9-10) 0207059-04 7/9/2002	BT-10 (13.5-14.5) 0207059-05 7/9/2002	G21-3(13-14) 0207087-01 7/11/2002	LW26S (12-13) 0309163-02 9/23/2003	LW28S (12-13) 0310011-05 10/1/2003
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational											
BETX (mg/kg)																
EPA Method SW6021B																
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	0.0298 U	NA	NA	NA	NA	NA	NA	0.0298 U
Ethylbenzene	13	--	--	--	--	NA	NA	NA	0.119 U	NA	NA	NA	NA	NA	NA	0.119 U
Toluene	12	--	--	--	180	NA	NA	NA	0.119 U	NA	NA	NA	NA	NA	NA	0.119 U
Xylenes, Total	210	--	--	--	100	NA	NA	NA	0.358 U	NA	NA	NA	NA	NA	NA	0.358 U
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			LW29D (15-16) 0309163-01 9/22/2003	LW30S (13.5-14.5) 0309137-01 9/19/2003	LW31S (15-16) 0310011-06 10/1/2003	LW32D (13.5-14.5) 0310041-02 10/2/2003	LW33S (13.5-14.5) 0310041-01 10/2/2003	LW41S (16-17) 0410156-05 10/28/2004	LW42S (13-14) 0410156-09 10/28/2004	LW43S (13-14) 0410156-13 10/28/2004	LW44S (12.5-13.5) 0410156-17 10/28/2004
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater									
			Excavation Worker	Occupational	Occupational									
SEMIVOLATILES (mg/kg) EPA Method SW8270														
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	NA	NA	NA	0.333 U	0.333 U	0.333 UJ	0.333
2-Methylnaphthalene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Acenaphthene	570	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Anthracene	12,000	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Benzo(a)anthracene	2	--	590	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Benzo(a)pyrene	8	--	59	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	0.19	0.0667 U	0.0667 UJ	0.159
Butylbenzylphthalate	930	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Carbazole	0.6	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Chrysene	160	--	59,000	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Dibenzofuran	--	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Di-n-Butylphthalate	2300	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Di-n-Octylphthalate	10,000	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Fluoranthene	4300	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.102	0.0667 UJ	0.0667 U
Fluorene	560	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	1.46	0.0667 UJ	0.284
Hexachloroethane	0.5	--	--	--	--	NA	NA	NA	NA	NA	0.133 U	0.133 U	0.133 UJ	0.133 U
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	0.0667 U	0.0667 U	0.0667 UJ	0.0667 U
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	0.333 U	0.333 U	0.333 UJ	0.333 U
Phenanthrene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	2.98	0.058 UJ	0.215
Pyrene	4200	--	--	--	--	NA	NA	NA	NA	NA	0.0667 U	0.127	0.058 UJ	0.0667 U
SEMIVOLATILES (mg/kg) EPA Method SW870SIM														
Acenaphthene	570	--	--	--	--	0.00667 U	1.28	0.00667 U	0.251 J	0.00667 UJ	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	0.00667 U	1.49	0.00667 U	0.105 J	0.00733 J	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	0.00667 U	0.545	0.00667 U	0.0427 J	0.129 J	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	0.00667 U	0.0133 U	0.00667 U	0.00733 J	0.0453 J	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	0.00667 U	0.0133 U	0.00667 U	0.008 J	0.0573 J	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	0.00667 U	0.0133 U	0.00667 U	0.00667 U	0.0653 J	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	0.00667 U	0.0133 U	0.00667 U	0.00667 UJ	0.0473 J	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	5900	--	--	0.00667 U	0.0133 U	0.00667 U	0.00667 UJ	0.0227 J	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	0.00667 U	0.0133 U	0.00667 U	0.00733 J	0.048 J	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	0.00667 U	0.0133 U	0.00667 U	0.00667 UJ	0.00667 UJ	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	0.00667 U	0.0613	0.00667 U	0.0227 J	0.148 J	NA	NA	NA	NA
Fluorene	560	--	--	--	--	0.00667 U	3.33	0.00667 U	0.349 J	0.00733 J	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	0.00667 U	0.0133 U	0.00667 U	0.00667 UJ	0.0307 J	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	0.00667 U	0.624	0.00667 U	2.24 J	0.00667 UJ	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	0.00667 U	5.29	0.00667 U	0.288 J	0.107 J	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	0.00667 U	0.171	0.00667 U	0.0373 J	0.165 U	NA	NA	NA	NA
CHLORINATED PHENOLS (mg/kg) Method 8040/8270SIM														
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			LW29D (15-16) 0309163-01 9/22/2003	LW30S (13.5-14.5) 0309137-01 9/19/2003	LW31S (15-16) 0310011-06 10/1/2003	LW32D (13.5-14.5) 0310041-02 10/2/2003	LW33S (13.5-14.5) 0310041-01 10/2/2003	LW41S (16-17) 0410156-05 10/29/2004	LW42S (13-14) 0410156-09 10/28/2004	LW43S (13-14) 0410156-13 10/28/2004	LW44S (12.5-13.5) 0410156-17 10/28/2004
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater									
			Excavation Worker	Occupational	Occupational									
VOLATILES (mg/kg)														
EPA Method SW8260														
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	0.01 U	0.01 U	0.01 U	NA	0.01 UJ	0.01 UJ	0.01 UJ
1,2-Dibromomethane	--	--	7.1	1.7	0.000059	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	NA	0.01 UJ	0.01 UJ	0.01 UJ
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	0.01 U	0.86 J	0.01 U	NA	0.01 UJ	0.01 UJ	0.01 UJ
2-Butanone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	0.04 UJ	0.04 UJ	0.04 UJ
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ
Acetone	16	--	--	--	--	NA	NA	NA	NA	NA	NA	0.1 UJ	0.1 UJ	0.1 UJ
Benzene	0.03	--	9400	48	0.052	NA	NA	0.01 U	0.01 U	0.01 U	NA	0.01 UJ	0.01 UJ	0.01 UJ
Carbon Disulfide	32	--	--	--	--	NA	NA	NA	NA	NA	NA	0.01 UJ	0.01 UJ	0.01 UJ
Ethylbenzene	13	--	--	--	--	NA	NA	0.01 U	0.01 U	0.01 U	NA	0.01 UJ	0.0224 J	0.01 UJ
Isopropylbenzene	--	--	--	--	--	NA	NA	0.01 U	0.773 J	0.01 U	NA	0.0584 J	2.05 J	3.95 J
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	0.02 U	0.02 U	0.02 U	NA	0.02 UJ	0.0357 J	0.0312 J
Methyl Iodide	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	10 U	10 U	10 U	10 U	10 U	NA	0.01 UJ	0.01 UJ	0.01 UJ
Naphthalene	24	--	20,000	--	15	NA	NA	NA	NA	NA	NA	0.044 J	0.0322 J	0.01 UJ
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	1.17 J	5.46 J	0.206 J
n-Propylbenzene	--	--	--	--	--	NA	NA	0.01 U	1.75 J	0.01 U	NA	0.471 J	10.9 J	5.74 J
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	0.01 U	0.01 U	0.01 U	NA	0.01 UJ	0.0322 J	0.01 UJ
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	0.193 J	2.1 J	3.98 J
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	0.01 UJ	0.0512 J	0.0329 J
Toluene	12	--	--	--	180	NA	NA	0.01 U	0.0136 J	0.01 U	NA	0.01 UJ	0.0238 J	0.0179 J
HYDROCARBONS (mg/kg)														
NWTPH-HCID														
Gasoline	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)														
TPH-Diesel Range	--	--	--	--	--	18.1 U	6260 J	18.4 U	6450 J	82.4	16.6 U	4750 J	15100 J	3500 J
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	60.4 U	55 U	61.3 U	57.6 U	175	56 U	54.5 U	293 U	59 U
NWTPH-G (mg/kg)														
TPH-Gasoline Range	--	--	--	80,000	110	3.02 U	1880 J	3.07 U	4200 J	3.16 U	2.8 U	705 J	2330 J	10800 J
PRIORITY POLLUTANT METALS (mg/kg)														
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	NA	NA	NA	2.21	1.61 U	1.56 U	1.79 U
Chromium (6010)	38	23.3	--	--	--	NA	NA	NA	NA	NA	13	12.4	12.9	12.1
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	NA	NA	11.2	10.8	12.2	11.8
Lead (7424)	--	9	750	--	30	1.86 UJ	1.79 U	2.35 U	1.67 U	2.25 U	1.61 U	1.61 U	1.56 U	1.70 U
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	12.1	12.1	14.4	12.8
Zinc (6010)	12,000	80.2	--	--	--	NA	NA	NA	NA	NA	44.1	42.2	47.3	43.8
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-2b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
BELL TERMINAL TANK FARM AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs	Background	Risk-Based Concentrations			LW29D (15-16) 0309163-01 9/22/2003	LW30S (13.5-14.5) 0309137-01 9/19/2003	LW31S (15-16) 0310011-06 10/1/2003	LW32D (13.5-14.5) 0310041-02 10/2/2003	LW33S (13.5-14.5) 0310041-01 10/2/2003	LW41S (16-17) 0410156-05 10/28/2004	LW42S (13-14) 0410156-09 10/28/2004	LW43S (13-14) 0410156-13 10/28/2004	LW44S (12.5-13.5) 0410156-17 10/28/2004
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater									
			Excavation Worker	Occupational	Occupational									
BETX (mg/kg)														
EPA Method SW8021B														
Benzene	0.03	--	9400	48	0.052	0.0302 U	0.0275 U	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	0.121 U	0.759	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	0.121 U	0.304	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	210	--	--	--	100	0.362 U	3.21	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)														
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

BZTO104(e)023434

TABLE C-3a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
LOADING RACK/ENTRANCE AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5			
	EPA Region 9 PRGs		Oregon SLVs				Background	Risk-Based Concentrations			Volatilization to Outdoor Air	Leaching to Groundwater	LW7S (0-0.5) S037C 03/17/97	G1 (1-1.5) 0106169-01 8/24/2001	G4 (1-1.5) 0108182-13 8/23/2001	G5 (1-1.5) 0108189-04 8/24/2001	BA2 (1-1.5) 0108172-29 8/22/2001	BA3 (1-1.5) 0108162-01 8/23/2001	BA4 (1-1.5) 0108182-04 8/23/2001	BA5 (1-1.5) 0108182-06 8/23/2001	BA6 (1-1.5) 0108182-10 8/23/2001
								Soil Ingestion, Dermal Contact, and Inhalation													
								Occupational	Worker	Excavation Worker											
VOLATILES (mg/kg)																					
EPA Method SW8260																					
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromomethane	0.073	--	--	--	--	--	0.033	0.25	7.1	1.7	0.000059	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Acetone	54,000	16	--	1250	--	--	--	--	--	--	--	NA	0.016	0.005 U	0.005 U	0.050 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	26,000	--	--	--	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Methyl Isobutyl Ether	--	--	--	--	--	--	--	--	--	--	--	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	190	94	10	3600	--	--	770	710	20,000	--	15	NA	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	NA	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9300	--	--	--	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	520	12	200	1440	--	--	86,000	33,000	--	180	--	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
HYDROCARBONS (mg/kg)																					
NWTPH-HCID																					
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	23.0 U	21.7 U	21.7 U	22.5 U	22.0 U	22.5 U	21.7 U	22.2 U	22.2 U
Kerosene	--	--	--	--	--	--	--	--	--	--	--	NA	57.4 U	54.3 U	54.3 U	56.2 U	54.9 U	56.2 U	54.3 U	56.6 U	56.6 U
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	57.5 U	54.3 U	54.3 U	56.2 U	54.9 U	56.2 U	54.3 U	56.6 U	56.6 U
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	NA	116 U	108 U	108 U	112 U	110 U	112 U	106 U	111 U	111 U
NWTPH-Dx (mg/kg)																					
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	16	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																					
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	5.0 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/kg)																					
Arsenic (7060)	1.6 (h)	29	10 (i)	29 (i)	10 (i)	60 (i)	5 (j)	--	--	--	--	NA	4.47	2.25	1.98	2.24	2.07	2.53	2.15	2.43	2.43
Chromium (6010)	450	58	1 (b)(6)	340,000 (b)	4 (b)(6)	0.4 (m)(6)	23.1	--	--	--	--	NA	16.7	15.8	17.4	16.9	15.8	15.7	19.1	18.1	18.1
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	NA	17.9 J	13	12 J	16.5	13.9	13.2	13.5	11.5	11.5
Lead (7421)	800	--	50	4000	16	500	9	750	760	760	30	NA	7.32 J	2.00 U	1.85 U	4.71	2.13	2.27	1.92 U	1.89 U	1.89 U
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	NA	16.8	17.6	18.6	19.3	17.9	17.9	20.4	18.7	18.7
Zinc (6010)	100,000	12,000	50 (h)	20,000	60 (h)	200	60.2	--	--	--	--	NA	67.6	49.8	46.8	208	49.1	52.1 U	52.6	46.9	46.9
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	310	--	0.3	73	1.5	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-3a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
LOADING RACK/ENTRANCE AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5		
	Risk-Based Concentrations										LW7S (0-0.5) S037C 03/17/97	COMP	COMP	COMP	COMP					
	Background					Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater		G1 (1-1.5)	G4 (1-1.5)	G5 (1-1.5)	BA2 (1-1.5)	BA3 (1-1.5)	BA4 (1-1.5)	BA5 (1-1.5)	BA6 (1-1.5)	
						Occupational	Construction Worker	Excavation Worker	Occupational	Occupational		0108189-01 8/24/2001	0108182-13 8/23/2001	0108189-04 8/24/2001	0108172-29 8/22/2001	0108182-01 8/23/2001	0108182-04 8/23/2001	0108182-08 8/23/2001	0108182-10 8/23/2001	
																				Industrial
BETX (mg/kg) EPA Method SW8021B	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	0.056 U	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	0.056 U	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	520	12	200	1440	--	--	68,000	39,000	--	--	180	0.056 U	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	0.056 U	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	0.056 U	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene																				
DIOXINS AND FURANS (ng/kg) Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-3b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
LOADING RACK/ENTRANCE AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			LW7S (7.5-9.0) S037D 03/17/97	LW7S (12.5-14.0) S037E 03/17/97	LW7S (19.5-20.3) S037F 03/17/97	G1 (10-13) 0108189-03 8/24/2001	G4 (12.5-14) 0108182-15 8/23/2001	COMP G29 (CF) Dup of G4 (12.5-14) 0108182-16 8/23/2001	COMP G5 (10.5-13) 0108189-06 8/24/2001	COMP BA2 (14-15) 0108172-31 8/22/2001	COMP BA3 (14-16) 0108182-03 8/23/2001	COMP BA4 (13-14) 0108182-06 8/23/2001	COMP BA5 (14-15) 0108182-07 8/23/2001	COMP BA6 (10.5-11.5) 0108182-12 8/23/2001
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation Worker	Occupational	Occupational												
VOLATILES (mg/kg)																	
EPA Method SW8260																	
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	NA	0.002 U	0.028 J	0.0028 J	0.001 U	0.00317	48.500 J	0.001 U	0.001 U	0.001 U
1,2-Dibromomethane	--	--	7.1	1.7	0.000959	NA	NA	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.010 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	NA	0.002 U	0.0085 J	0.001 UJ	0.001 U	0.00698	3.970 J	0.001 U	0.001 U	0.001 U
2-Butanone	--	--	--	--	--	NA	1.5 U	NA	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.050 U	0.005 U	0.005 U	0.005 U
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	0.002 U	0.001 U	0.001 U	0.001 U	0.0293	1.180	0.001 U	0.001 U	0.001 U
Acetone	16	--	--	--	--	NA	1.5 U	NA	0.005 U	0.0179	0.0216 J	0.005 U	0.015	0.0799	0.005 U	0.005 U	0.005 U
Benzene	0.03	--	9400	48	0.052	NA	0.31 U	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.010 U	0.001 U	0.001 U	0.001 U
Carbon Disulfide	32	--	--	--	--	NA	0.31 U	NA	0.001 U	0.001 U	0.00142 J	0.001 U	0.00248	0.010 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	13	--	--	--	--	NA	3	NA	0.001 U	0.00337 J	0.001 UJ	0.001 U	0.00193	0.010 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	--	--	--	--	--	NA	NA	NA	0.001 U	0.00149	0.001 U	0.001 U	0.0328	4.140	0.001 U	0.001 U	0.001 U
m,p-Xylene	210 (g)	--	--	--	--	NA	2.5	NA	0.002 U	0.015 J	0.00536 J	0.002 U	0.00522	0.0657 J	0.002 U	0.002 U	0.002 U
Methyl iodide	--	--	--	--	--	NA	NA	NA	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.010 U	0.001 U	0.001 U	0.001 U
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	64	--	20,000	--	16	NA	NA	NA	0.020 U	0.0165	0.0228 J	0.010 U	0.010 U	0.0259	0.010 U	0.010 U	0.010 U
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	0.004 U	0.0062 J	0.00516 J	0.002 U	0.0738	4.460 J	0.002 U	0.002 U	0.002 U
n-Propylbenzene	--	--	--	--	--	NA	NA	NA	0.002 U	0.0041	0.00479 J	0.001 U	0.00883	9.510	0.001 U	0.001 U	0.001 U
o-Xylene	210 (g)	--	--	--	100 (g)	NA	0.31 U	NA	0.001 U	0.00579 J	0.001 UJ	0.001 U	0.001 U	0.010 U	0.001 U	0.001 U	0.001 U
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	0.002 U	0.00495 J	0.001 U	0.001 U	0.0488	0.892 J	0.001 U	0.001 U	0.001 U
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	0.002 U	0.001 U	0.00303 J	0.001 U	0.00269	0.010 U	0.001 U	0.001 U	0.001 U
Toluene	12	--	--	--	180	NA	0.31 U	NA	0.001 U	0.001 U	0.00299	0.001 U	0.00182	0.0377	0.001 U	0.001 U	0.001 U
HYDROCARBONS (mg/kg)																	
NWTPH-HCID																	
Gasoline	--	--	--	80,000	110	NA	NA	NA	24.4 U	24.1 U	23.8 U	24.4 U	Gasoline	Gasoline	24.1 U	24.1 U	23.0 U
Kerosene	--	--	--	--	--	NA	NA	NA	61.0 U	Kerosene	Kerosene	61.0 U	60.2 U	59.5 U	60.2 U	60.2 U	57.5 U
Diesel	--	--	--	--	--	NA	NA	NA	61.0 U	60.2 U	59.5 U	61.0 U	60.2 U	59.5 U	60.2 U	60.2 U	57.5 U
Lube Oil	--	--	--	--	--	NA	NA	NA	Lube Oil	120 U	119 U	122 U	120 U	119 U	120 U	120 U	115 U
NWTPH-Dx (mg/kg)																	
TPH-Diesel Range	--	--	--	--	--	6.4 U	480	6.5 U	44.7	267	290	NA	NA	NA	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	408	415	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	NA	NA	NA	208	60.2 U	59.5 U	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																	
TPH-Gasoline Range	--	--	--	80,000	110	5.0 U	NA	5.0 U	NA	NA	NA	NA	107	1360	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/kg)																	
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	NA	3.30	1.82	1.85	2.04	2.41	1.86	2.01	2.19	2.12
Chromium (6010)	38	23	--	--	--	NA	NA	NA	16.8	14.3	14.2	16.5	15.2	14.9	14.1	13.2	15.8
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	13.5 J	11.5	11.8	14.3 J	12.0	11.8	11.0	10.7	14.3
Lead (7421)	--	9	750	--	30	NA	NA	NA	1.89 J	2.65	2.69	1.82 J	2.43	2.59	2.00 U	1.85 U	1.89 U
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	18.2	15.8	16.9	18	16.7	17.1	15.7	15.2	18.5
Zinc (6010)	12,000	60.2	--	--	--	NA	NA	NA	47.1	46.7	51.5	48.6	1290	43.7	44.8	41	49
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-3b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
LOADING RACK/ENTRANCE AREA (>3 FT)
PHASE III RI

						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF							
SCREENING CRITERIA																							
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			COMP		COMP		COMP		COMP		COMP									
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	G1 (10-13)		G4 (12.5-14)		G29 (CF)		G5 (10.5-13)		BA2 (14-15)		BA3 (14-16)		BA4 (13-14)		BA5 (14-15)		BA6 (10.5-11.5)	
			Excavation Worker	Occupational	Occupational	S037D 03/17/97	S037E 03/17/97	S037F 03/17/97	0108189-03 8/24/2001	0108182-15 8/23/2001	0108182-16 8/23/2001	0108189-06 8/24/2001	0108172-31 8/22/2001	0108182-03 8/23/2001	0108182-06 8/23/2001	0108182-07 8/23/2001	0108182-12 8/23/2001						
BETX (mg/kg)																							
EPA Method SW8021B																							
Benzene	0.03	--	9400	48	0.052	0.064 U	NA	0.066 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	0.064 U	NA	0.066 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	0.064 U	NA	0.066 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	0.064 U	NA	0.066 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100(g)	0.064 U	NA	0.066 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																							
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5		
	EPA Region 9 PRGs Industrial DAF=20		Oregon SLVs Plants Mammals Birds Inverts				Background	Risk-Based Concentrations					RA14-02 (0.5-0.75) 0107115-02 7/16/2001	RA14-03 (0-0.5) 0108077-01 8/7/2001	RA15-02 (0-0.5) 0107115-07 7/16/2001	RA15-02 (0.5-0.75) 0107115-08 7/16/2001	RA16-01 (0.5-0.75) 0108145-01 7/16/2001	RA16-06 (0-0.5) 0107115-11 8/17/2001	RA16-07 (0-0.5) 0108229-03 8/30/2001
								Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater							
								Occupational	Construction Worker	Excavation Worker	Occupational	Occupational							
VOLATILES (mg/kg)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	--	1500	1400	40,000	790	55	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromochloroethane	0.073	--	--	--	--	--	--	0.033	0.25	7.1	1.7	0.000059	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	--	1500	1400	40,000	--	12	NA	NA	NA	NA	NA	NA	NA
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Acetone	54,000	16	--	1260	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	--	74,000	26,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	2000	--	--	3300 (f)	--	--	--	51,000	24,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA
Methyl iodide	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	70	--	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA
Naphthalene	100	84	10	3900	--	--	--	770	710	20,000	--	15	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	240	--	--	3300 (f)	--	--	--	19,000	9300	--	--	--	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	--	66,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA
HYDROCARBONS (mg/kg)																			
NWTPH-HCID																			
Gasoline	--	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)																			
TPH-Diesel Range	--	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																			
TPH-Gasoline Range	--	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/kg)																			
Arsenic (7060)	1.6 (h)	29	10 (i)	29 (i)	10 (i)	60 (i)	5 (j)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	450	38	1 (b)(k)	340,000 (k)	4 (h)(k)	0.4 (f)(k)	23.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Lead (7421)	800	--	50	4000	16	500	9	750	750	750	--	30	NA	NA	NA	NA	NA	NA	NA
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	100,000	12,000	50 (h)	20,000	60 (i)	200	60.2	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Mercury (7421)	310	--	0.0	73	1.5	0.1	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA

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TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA											0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
	Background						Risk-Based Concentrations			RA14-02 (0.5-0.75) 0107115-02 7/16/2001	RA14-03 (0-0.5) 0108077-01 8/7/2001	RA15-02 (0-0.5) 0107115-07 7/16/2001	RA15-02 (0.5-0.75) 0107115-08 7/16/2001	RA16-01 (0.5-0.75) 0108145-01 7/16/2001	RA16-06 (0-0.5) 0107115-11 8/17/2001	RA16-07 (0-0.5) 0108229-03 8/30/2001		
							Soil Ingestion, Dermal Contact, and Inhalation										Volatilization to Outdoor Air	Leaching to Groundwater
							Occupational	Construction Worker	Excavation Worker									
BETX (mg/kg)																		
EPA Method SW8021B																		
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	--	66,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA
Xylenes, Total	420	210	--	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																		
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA

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TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

											0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	
SCREENING CRITERIA											COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	
Sample Identification: Laboratory Identification: Date Collected	EPA Region 9 PRGs		Oregon SLVs				Background	Risk-Based Concentrations			G6 (0-0.5)	G7 (0-0.5)	G10 (0-0.5)	G11 (0-0.5)	G15 (0-0.5)	G31 (0-0.5) Dup of G15 (0-0.5)	G17 (0-0.5)	G18 (0-0.5)	
	Industrial	DAF=20	Plants	Mammals	Birds	Inverts		Soil Ingestion, Dermal Contact, and Inhalation		Volatilization to Outdoor Air	Leaching to Groundwater	0108189-12	0108196-01	0108189-17	0108196-04	0108172-44	0108172-40	0108172-15	0108172-36
								Occupational	Construction Worker	Excavation Worker	Occupational	Occupational	8/24/2001	8/27/2001	8/24/2001	8/27/2001	8/22/2001	8/22/2001	8/21/2001
SEMIVOLATILES (mg/kg) EPA Method SW8270																			
2,6-Dinitrotoluene	620	0.0007	200 (a)	1440 (a)	--	--	--	--	--	--	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	
2-Methylnaphthalene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	0.067 U	0.074	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	
Acenaphthene	29000	570	20	--	--	--	--	41,000	16,000	--	0.067 U	0.530 J	0.067 U	0.067 U	0.096	0.067 U	0.067 U	0.067 U	
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	0.067 U	2.900	0.095	0.067 U	0.470	0.360	1.300	0.067 U	
Anthracene	100,000	12,000	--	--	--	--	--	--	90,000	--	0.067 U	4.300	0.092	0.067 U	0.780 J	0.440 J	1.300 J	0.067 U	
Benzo(a)anthracene	2.1	2	--	--	--	--	--	2.7	21	590	0.067 U	23,000	0.520	0.170	3.100 J	2,000 J	7,000 J	0.180 J	
Benzo(a)pyrene	0.21	8	--	125	--	--	--	0.27	2.1	59	0.076	30,000 J	0.920	0.330 J	4.700	3,300	12,000	0.350	
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	0.130	55,000	1,800	0.600	8,000 J	6,200 J	21,000 J	0.560 J	
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	0.088	20,000 J	1,000	0.280 J	3,600	2,900	13,000	0.380	
Benzo(k)fluoranthene	2.1	49	--	--	--	--	--	27	210	5900	0.067 U	19,000	0.550	0.210	0.067 U	1,400	6,500	0.180	
bis(2-Ethylhexyl)phthalate	120	3600 (c)	--	1020	4.5	--	--	0.067 U	0.330 U	0.067 U	0.067 U	0.330 U	0.067 U	0.067 U	0.067 U	0.071	0.067 U	0.067 U	
Butylbenzylphthalate	100,000	930	--	1020 (d)	4.5 (d)	--	--	0.067 U	0.330 U	0.067 U	0.067 U	0.330 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	
Carbazole	86	0.6	--	--	--	--	--	0.067 U	1,300 J	0.067 U	0.067 U	1,300 J	0.067 U	0.067 U	0.250	0.130	0.330	0.067 U	
Chrysene	210	160	--	--	--	--	--	270	2100	69,000	0.067 U	25,000 J	0.790	0.220 J	3,800 J	2,200 J	8,000 J	0.210 J	
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	--	0.27	2.1	59	0.067 U	0.840 J	0.067 U	0.067 U	0.170	0.130	0.400	0.067 U	
Dibenzofuran	1600	--	--	0.002	--	--	--	0.067 U	0.100 J	0.067 U	0.067 U	0.100 J	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	
Diethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	
Dimethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	
Di-n-Butylphthalate	62,000	2300	200	30,000	0.45	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.110	0.067 U	0.067 U	0.067 U	0.067 U	
Di-n-Octylphthalate	25,000	10,000	200 (e)	30,000 (e)	0.45 (e)	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	
Fluoranthene	22,000	4300	--	--	--	--	--	29,000	8900	--	0.084	55,000 J	2,000	0.490 J	11,000 J	7,000 J	18,000 J	0.270 J	
Fluorene	26,000	560	--	--	30	--	--	35,000	12,000	--	0.067 U	1,100 J	0.067 U	0.067 U	0.260 J	0.100 J	0.230	0.067 U	
Hexachloroethane	120	0.5	--	--	--	--	--	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	--	2.7	21	590	0.067 U	16,000	0.730	0.210	2,700	2,200	8,700	0.270	
Naphthalene	190	84	10	3900	--	--	--	770	710	20,000	0.067 U	0.140	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	
Pentachlorophenol	9.0	0.03	3	30	--	4	--	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	0.067 U	35,000	1,100	0.067 U	35,000	1,100	0.160	7,800 J	3,800 J	8,500 J	0.078 J	
Pyrene	20,000	4200	--	--	--	--	--	21,000	6700	--	0.100	60,000 J	2,200	0.510 J	11,000 J	7,700 J	20,000 J	0.380 J	
SEMIVOLATILES (mg/kg) EPA Method SW8270SIM																			
Acenaphthene	29,000	570	20	--	--	--	--	41,000	16,000	--	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	100,000	12,000	--	--	--	--	--	--	90,000	--	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene	2.1	2	--	--	--	--	--	2.7	21	590	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene	0.21	8	--	125	--	--	--	0.27	2.1	59	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene	2.1	49	--	--	--	--	--	27	210	5900	NA	NA	NA	NA	NA	NA	NA	NA	
Chrysene	210	160	--	--	--	--	--	270	2100	69,000	NA	NA	NA	NA	NA	NA	NA	NA	
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	--	0.27	2.1	59	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene	22,000	4300	--	--	--	--	--	29,000	8900	--	NA	NA	NA	NA	NA	NA	NA	NA	
Fluorene	26,000	560	--	--	30	--	--	35,000	12,000	--	NA	NA	NA	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	--	2.7	21	590	NA	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	190	84	10	3900	--	--	--	770	710	20,000	NA	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Pyrene	20,000	4200	--	--	--	--	--	21,000	6700	--	NA	NA	NA	NA	NA	NA	NA	NA	
CHLORINATED PHENOLS (mg/kg) Method 8040/8270SIM																			
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	
	EPA Region 9 PRGs Industrial DAF=20 Plants Mammals Birds Inverts					Risk-Based Concentrations					COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	
						Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater									
						Background	Occupational	Construction Worker	Excavation Worker	Occupational	Occupational	G6 (0-0.5) 0108189-12 8/24/2001	G7 (0-0.5) 0108196-01 8/27/2001	G10 (0-0.5) 0108189-17 8/24/2001	G11 (0-0.5) 0108196-04 8/27/2001	G15 (0-0.5) 0108172-44 8/22/2001	Dup of G15 (0-0.5) 0108172-40 8/22/2001	G17 (0-0.5) 0108172-15 8/21/2001	G18 (0-0.5) 0108172-36 8/22/2001
VOLATILES (mg/kg)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	0.001 U	0.002 U	0.001 U	0.002 U	0.001 U	0.001 U	0.00192	0.001 U
1,2-Dibromoethane	0.073	--	--	3300 (f)	--	--	0.093	0.25	7.1	1.7	0.000059	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	0.001 U	0.002 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone	110,000	--	--	3300 (f)	--	--	--	--	--	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	0.001 U	0.002 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
Acetone	54,000	16	--	1250	--	--	--	--	--	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon disulfide	720	32	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	2000	--	--	3300 (f)	--	--	61,000	24,000	--	--	--	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	0.002 U	0.002 U	0.002 U	0.004 U	0.002 U	0.002 U	0.00271	0.002 U
Methyl iodide	--	--	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	190	84	10	3300	--	--	770	710	20,000	--	15	0.010 U	0.020 U	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	0.002 U	0.004 U	0.002 U	0.004 U	0.002 U	0.002 U	0.002 U	0.002 U
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9900	--	--	--	0.001 U	0.002 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.002 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.002 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	520	12	200	1440	--	--	68,000	33,000	--	--	180	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
HYDROCARBONS (mg/kg)																			
NWTPH-HCID																			
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	21.5 U	21.7 U	21.7 U	22.7 U	22.5 U	22.2 U	21.5 U	22.7 U
Kerosene	--	--	--	--	--	--	--	--	--	--	--	53.8 U	54.1 U	54.3 U	56.8 U	56.6 U	56.6 U	56.8 U	56.8 U
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	53.8 U	Diesel	54.3 U	56.8 U	56.2 U	56.6 U	Diesel	56.8 U
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	108 U	Lube Oil	109 U	114 U	112 U	111 U	Lube Oil	114 U
NWTPH-Dx (mg/kg)																			
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	549	NA	NA	NA	NA	224	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	983	NA	NA	NA	NA	344	NA
NWTPH-G (mg/kg)																			
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT																			
METALS (mg/kg)																			
Arsenic (7000)	1.6 (h)	29	10 (f)	29 (f)	10 (f)	60 (f)	5 (j)	--	--	--	--	1.9	4.5	2.62	2.30	2.57	2.15	3.79	2.80
Cadmium (6010)	450	38	1 (h)(k)	340,000 (k)	4 (h)(k)	0.4 (h)(k)	23.1	--	--	--	--	10.7	13.9	20.0	17.5	19.3	21.3	22.4	17.9
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	11.6 U	14.5	15.3 U	15.4	20.5	19.00	46.0	18.1
Lead (7421)	800	--	50	4000	15	500	9	750	750	750	30	13.4 U	12.3	17.5	10.9	30.7	40.5	52.2	18.5
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	10.3	16.9	15.6	20.1	19.9	21.3	20.3	19.2
Zinc (6010)	100,000	12,000	50 (b)	20,000	60 (h)	200	60.2	--	--	--	--	66.4	77.5	73.5	53.5	92.5	95.3	179	712
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7421)	310	--	0.3	73	1.6	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
	EPA Region 9 PRGs		Oregon SLVs		Background	Risk-Based Concentrations					COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP
						Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater								
						Occupational	Construction Worker	Excavation Worker	Occupational	Occupational								
G6 (0-0.5)	G7 (0-0.5)	G10 (0-0.5)	G11 (0-0.5)	G15 (0-0.5)	Dup of G15 (0-0.5)	G17 (0-0.5)	G18 (0-0.5)											
0108189-12	0108196-01	0108189-17	0108196-04	0108172-44	0108172-40	0108172-15	0108172-36											
8/24/2001	8/27/2001	8/24/2001	8/27/2001	8/22/2001	8/22/2001	8/21/2001	8/22/2001											
BETX (mg/kg)																		
EPA Method SW8021B																		
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	
Toluene	520	12	200	1440	--	--	66,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	
Xylenes Total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	
DIOXINS AND FURANS (ng/kg)																		
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	

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TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5			
Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA										COMP G19 (0-0.5) 0108172-48 8/22/2001	COMP BA7 (0-0.5) 0108196-20 8/27/2001	COMP BA8 (0-0.5) 108196-16 8/27/2001	COMP BA19 (0-0.5) Dup of BA8 (0-0.5) 0108196-15 8/27/2001	COMP BA9 (0-0.5) 0108182-23 8/23/2001	COMP BA10 (0-0.5) 0108196-12 8/27/2001	COMP BA11 (0-0.5) 0108196-08 8/27/2001	EP-VS015-001 (0-0.5) 0208160-19 8/29/2002		
	EPA Region 9 PRGs		Oregon SLVs			Background	Risk-Based Concentrations													
	Industrial	DAF=20	Plants	Mammals	Birds		Inverts	Soil Ingestion, Dermal Contact, and Inhalation											Volatilization to Outdoor Air Occupational	Leaching to Groundwater Occupational
								Occupational	Construction Worker	Excavation Worker										
SEMIVOLATILES (mg/kg) EPA Method SW8270																				
2,6-Dinitrotoluene	620	0.0007	200 (a)	1440 (a)	--	--	--	--	--	--	--	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	NA		
2-Methylnaphthalene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	0.067 U	0.067 U	0.130	0.250	0.480	0.067 U	0.067 U	NA	
Acenaphthene	29000	570	20	--	--	--	41,000	16,000	--	--	--	0.067 U	0.067 U	0.160 J	1.500 J	2.800	0.067 U	0.067 U	NA	
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	0.067 U	0.067 U	1.800	2.200	2.400	0.067 U	0.080	NA	
Anthracene	100,000	12,000	--	--	--	--	--	90,000	--	--	--	0.067 U	0.067 U	2.000	1.900	14,000	0.067 U	0.083	NA	
Benzo(a)anthracene	2.1	2	--	--	--	--	2.7	21	590	--	--	0.360 J	0.067 U	6.700	6.200	33,000	0.067 U	0.360	NA	
Benzo(a)pyrene	0.21	8	--	125	--	--	0.27	2.1	59	--	--	0.700	0.110 J	16,000 J	11,000 J	36,000	0.083 J	0.560 J	NA	
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	1.200 J	0.210	28,000 J	20,000 J	72,000	0.140	1.100	NA	
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	0.820	0.067 U	15,000 J	10,000 J	39,000	0.083 J	0.480 J	NA	
Benzo(k)fluoranthene	2.1	49	--	--	--	--	2.7	210	5900	--	--	0.370	0.067 U	8.400	6.500	20,000	0.067 U	0.320	NA	
bis(2-Ethylhexyl)phthalate	120	3600 (c)	--	1020	4.5	--	--	--	--	--	--	0.073	0.068 U	1.900	2.100	0.670 U	0.067 U	0.067 U	NA	
Butylbenzylphthalate	100,000	930	--	1020 (c)	4.5 (d)	--	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.670 U	0.067 U	0.067 U	NA	
Carbazole	86	0.6	--	--	--	--	--	--	--	--	--	0.067 U	0.067 U	0.240 J	2.100 J	7.800	0.067 U	0.067 U	NA	
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	--	0.510 J	0.067 U	9.800 J	6.700 J	37,000	0.067 U	0.420 J	NA	
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	--	0.067 U	0.067 U	0.430 J	0.690 J	2,300	0.067 U	0.067 U	NA	
Dibenzofuran	1600	--	--	0.002	--	--	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.600 J	1.400	0.067 U	0.067 U	NA	
Diethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.670 U	0.067 U	0.067 U	NA	
Dimethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.670 U	0.067 U	0.067 U	NA	
Di-n-Butylphthalate	62,000	2300	200	30,000	0.45	--	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.670 U	0.067 U	0.067 U	NA	
Di-n-Octyl phthalate	25,000	10,000	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.670 U	0.067 U	0.067 U	NA	
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	--	0.990 J	0.150 J	20,000 J	15,000 J	96,000	0.096 J	1.100 J	NA	
Fluorene	26,000	560	--	--	30	--	35,000	12,000	--	--	--	0.067 U	0.067 U	0.250	1.600	4.800	0.067 U	0.067 U	NA	
Hexachloroethane	120	0.5	--	--	--	--	--	--	--	--	--	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	NA	
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	--	0.570	0.067 U	10,000	7.100	25,000	0.067 U	0.370	NA	
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	15	0.067 U	0.130 U	0.110	0.190	0.490	0.130 U	0.130 U	NA	
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	NA	
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	0.360 J	0.067 U	8.200	6.300	72,000	0.100	0.510	NA	
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	--	1.200 J	0.180 J	21,000 J	17,000 J	96,000	0.120 J	1.100 J	NA	
SEMIVOLATILES (mg/kg) EPA Method SW8270S1M																				
Acenaphthene	29,000	570	20	--	--	--	41,000	16,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Anthracene	100,000	12,000	--	--	--	--	--	90,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene	2.1	2	--	--	--	--	2.7	21	590	--	--	NA	NA	NA	NA	NA	NA	NA	0.0987	
Benzo(a)pyrene	0.21	8	--	125	--	--	0.27	2.1	59	--	--	NA	NA	NA	NA	NA	NA	NA	0.213	
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.268	
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.0713	
Benzo(k)fluoranthene	2.1	49	--	--	--	--	2.7	210	5900	--	--	NA	NA	NA	NA	NA	NA	NA	0.152	
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	0.0347	
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Fluorene	26,000	560	--	--	30	--	35,000	12,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	--	NA	NA	NA	NA	NA	NA	NA	0.157	
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	
CHLORINATED PHENOLS (mg/kg) Method 8040/8270S1M																				
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification Laboratory Identification Date Collected	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
	Risk-Based Concentrations					Volatilization to Outdoor Air			Leaching to Groundwater		COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP
	Background					Occupational			Occupational		G19 (0-0.5)	BA7 (0-0.5)	BA8 (0-0.5)	Dup of BA8 (0-0.5)	BA9 (0-0.5)	BA10 (0-0.5)	BA11 (0-0.5)	EP-VS015-001 (0-0.5)
	EPA Region 9 PRGs	Oregon SLVs				Occupational	Worker	Excavation	Occupational	Occupational	0108172-48	0108198-20	108198-16	0108196-15	0108182-23	0108196-12	0108196-08	0208160-19
	Industrial	DAF=20	Plants	Mammals	Birds	Inverts					8/22/2001	8/27/2001	8/27/2001	8/27/2001	8/23/2001	8/27/2001	8/27/2001	8/29/2002
VOLATILES (mg/kg)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	0.001 U	0.001 U	0.00178	0.00169	0.001 U	0.002 U	0.002 U
1,4-Dibromobenzene	10,073	--	--	3300 (f)	--	--	0.033	0.25	7.1	1.7	0.00059	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	0.001 U	0.001 U	0.00113	0.00108	0.001 U	0.002 U	0.002 U
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U
Acetone	54,000	16	--	1250	--	--	--	--	--	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	26,000	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U
Methyl Iodide	--	--	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA
Naphthalene	180	54	10	3600	--	--	770	710	20,000	--	15	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.002 U	0.004 U	0.004 U
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9300	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	0.002 U
Toluene	520	12	200	1440	--	--	85,000	39,000	--	180	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
HYDROCARBONS (mg/kg)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	23.0 U	22.5 U	21.7 U	21.7 U	22.2 U	21.7 U	21.7 U
Kerosene	--	--	--	--	--	--	--	--	--	--	--	57.5 U	56.2 U	54.3 U	54.3 U	55.6 U	54.3 U	54.3 U
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	57.5 U	56.2 U	Diesel	Diesel	Diesel	54.3 U	54.3 U
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	115 U	112 U	Lube Oil	Lube Oil	Lube Oil	Lube Oil	109 U
NWTPH-Dx (mg/kg)																		
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	266	295	496	25.1	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	722	652	766	105	NA
NWTPH-G (mg/kg)																		
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/kg)																		
Arsenic (7060)	1.6 (n)	29	10 (f)	29 (f)	10 (f)	60 (f)	5 (f)	--	--	--	--	2.45	3.12	5.60	6.32	3.49	2.89	2.59
Chromium (6010)	450	38	1 (n)	340,000 (k)	4 (n)	104 (n)	23.1	--	--	--	--	18.3	18.2	19.0	21.4	25	16.7	16.2
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	23.1	15.3	36.9	38.3	52.9	15.8	12.3
Lead (7421)	800	--	50	4000	16	500	9	750	750	750	30	1170	11.7	26.2	25.9	42.2	12.6	14.3
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	18.6	19.0	18.0	20.1	23.9	16.5	12.2
Zinc (6010)	100,000	12,000	60 (n)	20,000	60 (n)	200	60.2	--	--	--	--	201	66.1	96.4	95.1	161	72.4	65.5
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Mercury (2471)	310	--	0.0	75	1.5	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	
	Risk-Based Concentrations										COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	
	EPA Region 9 PRGs		Oregon SLVs			Background	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater	G19 (0-0.5)	BA7 (0-0.5)	BA8 (0-0.5)	Dup of BA8 (0-0.5)	BA9 (0-0.5)	BA10 (0-0.5)	BA11 (0-0.5)	EP-VS015-001 (0-0.5)
	Industrial	DAF=20	Plants	Mammals	Birds		Inverts	Occupational	Construction Worker	Excavation Worker	Occupational	Occupational	0108172-48 8/22/2001	0108196-20 8/27/2001	108196-16 8/27/2001	0108196-15 8/27/2001	0108182-23 8/23/2001	0108196-12 8/27/2001	0108196-08 8/27/2001
BETX (mg/kg)																			
EPA Method SW8021B																			
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																			
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
	Risk-Based Concentrations					Volatilization to Outdoor Air		Leaching to Groundwater										
	EPA Region 9 PRGs		Oregon SLVs			Background	Soil Ingestion, Dermal Contact, and Inhalation			Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational
	Industrial	DAF=20	Plants	Mammals	Birds		Occupational	Worker	Excavation Worker									
SEMIVOLATILES (mg/kg) EPA Method SW8270																		
2,6-Dinitrotoluene	620	0.0007	200 (a)	1440 (a)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
2-Methylnaphthalene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Acenaphthene	29000	570	20	--	--	--	41,000	16,000	--	--	--	--	--	NA	NA	NA	NA	NA
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Anthracene	100,000	12,000	--	--	--	--	--	90,000	--	--	--	--	--	NA	NA	NA	NA	NA
Benzo(a)anthracene	2.1	2	--	--	--	--	2.7	2.1	590	--	--	--	--	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.21	8	--	125	--	--	0.27	2.1	59	--	--	--	--	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	21	49	--	--	--	--	27	210	5900	--	--	--	--	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	120	3600 (c)	--	1020	4.5	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Butylbenzylphthalate	100,000	930	--	1020 (d)	4.5 (d)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Carbazole	86	0.6	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	--	--	--	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	--	--	--	NA	NA	NA	NA	NA
Dibenzofuran	1600	--	--	0.002	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Diethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Dimethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Di-n-Butylphthalate	62,000	2300	200	30,000	0.45	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Di-n-Octylphthalate	25,000	10,000	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	--	--	--	NA	NA	NA	NA	NA
Fluorene	26,000	660	--	--	30	--	35,000	12,000	--	--	--	--	--	NA	NA	NA	NA	NA
Hexachloroethane	120	0.5	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	--	--	--	NA	NA	NA	NA	NA
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	--	15	--	NA	NA	NA	NA	NA
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	--	--	--	NA	NA	NA	NA	NA
SEMIVOLATILES (mg/kg) EPA Method SW8270SIM																		
Acenaphthene	29,000	570	20	--	--	--	41,000	16,000	--	--	--	--	--	NA	NA	0.118	0.0387	0.00667 U
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	NA	NA	0.734	0.263	0.02
Anthracene	100,000	12,000	--	--	--	--	--	90,000	--	--	--	--	--	NA	NA	1.09	0.404	0.014
Benzo(a)anthracene	2.1	2	--	--	--	--	2.7	2.1	590	--	--	--	--	0.0347	0.53	0.27	3.05	0.192
Benzo(a)pyrene	0.21	8	--	125	--	--	0.27	2.1	59	--	--	--	--	0.0347	0.53	0.27	3.05	0.192
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	--	--	0.0347	0.53	0.27	3.05	0.192
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	--	--	NA	NA	2.88	0.92	0.134
Benzo(k)fluoranthene	21	49	--	--	--	--	27	210	5900	--	--	--	--	0.0127	0.165	3.0	1.16	0.107
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	--	--	--	0.028	0.27	10	3.55	0.176
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	--	--	--	0.00667 U	0.0667	0.65	0.303	0.028
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	--	--	--	NA	NA	24.5	9.2	0.305
Fluorene	26,000	660	--	--	30	--	35,000	12,000	--	--	--	--	--	NA	NA	0.247	0.09	0.00667 U
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	--	--	--	0.026	0.306	2.6	1.27	0.115
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	--	15	--	NA	NA	0.0967	0.0413	0.014
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	--	--	NA	NA	10.9	4.44	0.0847
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	--	--	--	NA	NA	28.9	13.8	0.483
CHLORINATED PHENOLS (mg/kg) Method 8040/8270SIM																		
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	--	--	NA	NA	NA	NA	NA

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5	0-0.5
	Risk-Based Concentrations					Volatilization to Outdoor Air		Leaching to Groundwater										
	EPA Region 9 PRGs		Oregon SLVs			Background	Soil Ingestion, Dermal Contact, and Inhalation			Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational
	Industrial	DAF=20	Plants	Mammals	Birds		Occupational	Worker	Excavation Worker									
VOLATILES (mg/kg)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloromethane	0.073	--	--	3300 (f)	--	--	0.033	0.25	7.1	1.7	0.000359	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	NA	NA	NA	NA	NA	NA	NA
2-Butanone	110,000	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Acetone	54,000	15	--	1250	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	720	32	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA
Methyl Isobutyl	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA
Naphthalene	190	94	10	3900	--	--	270	710	20,000	--	15	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	240	--	--	3300 (f)	--	--	18,000	8300	--	--	--	NA	NA	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	68,000	69,000	--	--	180	NA	NA	NA	NA	NA	NA	NA
HYDROCARBONS (mg/kg)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)																		
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																		
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/kg)																		
Arsenic (7060)	1.6 (h)	29	10 (i)	29 (i)	10 (i)	60 (i)	5 (j)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	450	36	1 (b)(k)	340,000 (k)	4 (b)(k)	0.4 (b)(k)	23.1	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Lead (7431)	800	--	30	4000	16	500	9	750	750	750	30	NA	NA	18.3	5.07	5.87	19.7	1.82 U
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	100,000	12,000	50 (b)	20,000	60 (b)	200	60.2	--	--	--	--	NA	NA	97.9	70.3	102	68.9	67.7
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Mercury (7431)	310	--	0.9	73	1.5	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5										0-0.5										0-0.5										0-0.5										0-0.5										0-0.5																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
	Risk-Based Concentrations										G15-4 (0-0.5)										G15-5 (0-0.5)										G15-6 (0-0.5)										G17-4 (0-0.5)										G17-5 (0-0.5)										G17-6 (0-0.5)										G19-3 (0-0.5)										G19-4 (0-0.5)										G19-5 (0-0.5)																																																																																																																																																																																																																																																																																																																																																																																																																																																
	EPA Region 9 PRGs					Oregon SLVs					Background					Soil Ingestion, Dermal Contact, and Inhalation					Volatilization to Outdoor Air					Leaching to Groundwater					G15-4 (0-0.5)					G15-5 (0-0.5)					G15-6 (0-0.5)					G17-4 (0-0.5)					G17-5 (0-0.5)					G17-6 (0-0.5)					G19-3 (0-0.5)					G19-4 (0-0.5)					G19-5 (0-0.5)																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
Industrial	DAF=20	Plants	Mammals	Birds	Inverts	Occupational	Construction Worker	Excavation Worker	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occupational	Occup

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'	0-0.5'		
	Risk-Based Concentrations											G15-4 (0-0.5) 0309196-38 9/29/2003	G15-5 (0-0.5) 0309196-10 9/29/2003	G15-6 (0-0.5) 0309196-35 9/29/2003	G17-4 (0-0.5) 0309196-07 9/29/2003	G17-5 (0-0.5) 0309196-01 9/29/2003	G17-6 (0-0.5) 0309196-04 9/29/2003	G19-3 (0-0.5) 0309196-13 9/29/2003	G19-4 (0-0.5) 0309196-32 9/29/2003	G19-5 (0-0.5) 0309196-41 9/29/2003		
	EPA Region 9 PRGs	Oregon SLVs					Background	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air										Leaching to Groundwater	
		Industrial	DAF=20	Plants	Mammals	Birds		Inverts	Occupational	Construction Worker	Excavation Worker										Occupational	Occupational
BETX (mg/kg)	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA		
EPA Method SW8021B	400	13	--	3300 (f)	--	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA		
Ethylbenzene	520	12	200	1440	--	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA		
Toluene	420	210	--	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA		
Xylenes, Total	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA		
m,p-Xylene	420 (g)	210 (g)	1	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA		
o-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA		
DIOXINS AND FURANS (ng/kg)	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA		
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA		

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										1-15	1-15	1-15	1-15	1-15	1-15	1-15
	Risk-Based Concentrations						Volatilization to Outdoor Air		Leaching to Groundwater		COMP	COMP	COMP	COMP	COMP	COMP	COMP
	Soil Ingestion, Dermal Contact, and Inhalation						Occupational		Occupational		G6 (1-15)	G7 (1-15)	G10 (1-15)	G11 (1-15)	G15 (1-15)	G17 (1-15)	G18 (1-15)
	EPA Region 9 PRGs	Oregon SLVs				Background	Occupational	Worker	Excavation	Worker	Occupational	Occupational					
	Industrial	DAF-20	Plants	Mammals	Birds	Inverts											
SEMIVOLATILES (mg/kg)																	
EPA Method SW8270																	
2,6-Dinitrotoluene	620	0.0007	200 (a)	1440 (a)	--	--	--	--	--	--	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U
2-Methylnaphthalene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Acenaphthene	29000	570	20	--	--	--	41,000	16,000	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Anthracene	100,000	12,000	--	--	--	--	--	90,000	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Benzo(a)anthracene	2.1	2	--	--	--	--	2.7	21	590	--	0.067 U	0.067 U	0.300	0.100	0.067 U	0.120 J	0.067 U
Benzo(a)pyrene	0.21	8	--	125	--	--	0.27	2.1	59	--	0.086	0.074 J	0.640	0.170 J	0.067 U	0.210	0.067 U
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	0.130	0.120	1.200	0.290	0.057 U	0.360 J	0.067 U
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	0.068	0.067 U	--	--	0.067 U	0.067 U	0.740	0.120 J	0.067 U	0.310	0.067 U
Benzo(k)fluoranthene	21	49	--	--	--	--	27	210	5900	--	0.067 U	0.067 U	0.360	0.089	0.067 U	0.110	0.067 U
bis(2-Ethylhexyl)phthalate	120	3600 (c)	--	1020	4.5	--	0.067 U	0.067 U	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Butylbenzylphthalate	100,000	930	--	1020 (d)	4.5 (d)	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Carbazole	86	0.6	--	--	--	--	0.067 U	0.067 U	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	0.067 U	0.067 U	0.460	0.110 J	0.067 U	0.140 J	0.067 U
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Dibenzofuran	1600	--	--	0.002	--	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Diethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Dimethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Di-n-Butylphthalate	62,000	2300	200	30,000	0.45	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Di-n-Octylphthalate	25,000	10,000	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	0.078	0.140 J	1.100	0.250 J	0.067 U	0.310 J	0.067 U
Fluorene	26,000	560	--	--	30	--	35,000	12,000	--	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Hexachloroethane	120	0.5	--	--	--	--	0.130 U	0.130 U	--	--	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U	0.130 U
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	0.067 U	0.067 U	0.530	0.095	0.067 U	0.200	0.067 U
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U	0.067 U
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U	0.330 U
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	0.067 U	0.068	0.410	0.067 U	0.067 U	0.100 J	0.067 U
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	0.110	0.140	1.200	0.280 J	0.067 U	0.450 J	0.067 U
SEMIVOLATILES (mg/kg)																	
EPA Method SW8270SIM																	
Acenaphthene	29,000	570	20	--	--	--	41,000	16,000	--	--	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Anthracene	100,000	12,000	--	--	--	--	--	90,000	--	--	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	2.1	2	--	--	--	--	2.7	21	590	--	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.21	8	--	125	--	--	0.27	2.1	59	--	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	21	49	--	--	--	--	27	210	5900	--	NA	NA	NA	NA	NA	NA	NA
Chrysene	210	160	--	--	--	--	270	2100	59,000	--	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	0.27	2.1	59	--	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	22,000	4300	--	--	--	--	29,000	8900	--	--	NA	NA	NA	NA	NA	NA	NA
Fluorene	26,000	560	--	--	30	--	35,000	12,000	--	--	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	2.7	21	590	--	NA	NA	NA	NA	NA	NA	NA
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Pyrene	29,000	4200	--	--	--	--	21,000	6700	--	--	NA	NA	NA	NA	NA	NA	NA
CHLORINATED PHENOLS (mg/kg)																	
Method 8040/8270SIM																	
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	NA	NA	NA	NA	NA	NA	NA

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	
						Risk-Based Concentrations					COMP	COMP	COMP	COMP	COMP	COMP	COMP		
	EPA Region 9 PRGs		Oregon SLVs			Background	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater	G6 (1-1.5)	G7 (1-1.5)	G10 (1-1.5)	G11 (1-1.5)	G15 (1-1.5)	G17 (1-1.5)	G18 (1-1.5)	G19 (1-1.5)
	Industrial	DAF-20	Plants	Mammals	Birds		Inverts	Occupational	Construction Worker	Excavation Worker	Occupational	Occupational	0108189-13 8/24/2001	0108196-02 8/27/2001	0108189-18 8/24/2001	0108196-05 8/27/2001	0108172-45 8/22/2001	0108172-16 8/21/2001	0108172-37 8/22/2001
VOLATILES (mg/kg)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
1,2-Dibromopropane	0.073	--	--	--	--	--	0.033	0.26	7.1	1.7	0.000059	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
Acetone	54,000	16	--	1950	--	--	--	--	--	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	0.002 U	0.002 U	0.002 U	0.004 U	0.002 U	0.002 U	0.002 U	0.002 U
Methyl Iodide	--	--	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	190	64	10	3300	--	--	770	710	20,000	--	18	0.010 U	0.010 U	0.010 U	0.020 U	0.010 U	0.010 U	0.010 U	0.010 U
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.004 U	0.002 U	0.002 U	0.002 U	0.002 U
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9300	--	--	--	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
Toluene	520	12	200	1440	--	--	85,000	39,000	--	--	180	0.001 U	0.001 U	0.001 U	0.002 U	0.001 U	0.001 U	0.001 U	0.001 U
HYDROCARBONS (mg/kg)																			
NWTPH-HCID																			
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	22.5 U	21.7 U	21.7 U	22.2 U	21.3 U	21.7 U	21.3 U	21.3 U
Kerosene	--	--	--	--	--	--	--	--	--	--	--	56.2 U	54.3 U	54.3 U	55.6 U	53.2 U	54.3 U	53.2 U	53.2 U
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	56.2 U	54.3 U	54.3 U	55.6 U	53.2 U	54.3 U	53.2 U	53.2 U
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	112 U	109 U	109 U	111 U	108 U	108 U	106 U	106 U
NWTPH-Dx (mg/kg)																			
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																			
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/kg)																			
Arsenic (7060)	1.6 (h)	29	10 (i)	29 (i)	10 (i)	60 (i)	5 (j)	--	--	--	--	2.08	2.45	1.74	1.85	2.22	1.88	2.52	2.20
Chromium (6010)	450	36	1 (h)(k)	340,000 (k)	4 (h)(k)	0.4 (h)(k)	23.1	--	--	--	--	16.1	16.2	16.2	18.2	17.8	16.4	16.4	16.6
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	12.7 J	13.1	15.9 J	16.0	13.6	16.3	13.9	16.7
Lead (7421)	800	--	50	4000	16	500	9	750	750	750	30	8.72 U	2.23	30.8 J	2.98	2.19	7.98 J	2.00 U	2.63
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	17.1	19.5	17.3	20.7	20.2	18.2	19.1	17.9
Zinc (6010)	100,000	12,000	50 (h)	20,000	60 (h)	200	66.2	--	--	--	--	138	49.7	57.9	56.4	48.8	334 J	68.2	50.8
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7441)	310	--	0.3	73	1.5	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA											1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5
	EPA Region 9 PRGs Oregon SLVs Background					Risk-Based Concentrations					COMP	COMP	COMP	COMP	COMP	COMP	COMP		
						Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to	Leaching to									
						Construction			Outdoor Air	Groundwater									
						Occupational	Worker	Excavation	Occupational	Occupational									
	Industrial	DAF=20	Plants	Mammals	Birds	Inverts													
BETX (mg/kg)																			
EPA Method SW8021B																			
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	
Xylenes, Total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	
DIOXINS AND FURANS (ng/kg)																			
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	

TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	
	EPA Region 9 PRGs		Oregon SLVs			Background	Risk-Based Concentrations			Volatilization to Outdoor Air	Leaching to Groundwater	COMP	COMP	COMP	COMP	G10-4 (1-1.5)	G10-5 (1-1.5)	G11-3 (1-1.5)	
							Soil Ingestion, Dermal Contact, and Inhalation												
	Industrial	DAF=20	Plants	Mammals	Birds		Inverts	Occupational	Construction Worker	Excavation Worker	Occupational	Occupational							
	0108196-21	0108196-17	0108182-24	0108196-13	0108196-09		0309196-28	0309196-45	0309196-31										
VOLATILES (mg/kg)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	1500	1400	40,000	790	55	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
1,2-Dibromochloroethane	0.073	--	--	--	--	--	0.033	0.25	7.1	1.7	0.000059	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	1500	1400	40,000	--	12	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA	NA
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
Acetone	54,000	16	--	1850	--	--	--	--	--	--	--	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	NA	NA	NA
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	NA	NA
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
Isopropylbenzene	2000	--	--	3300 (f)	--	--	51,000	24,000	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.004 U	NA	NA	NA
Methyl Iodide	--	--	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.001 U	NA	NA	NA
Methyl tert-butyl ether	70	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	190	84	10	3900	--	--	770	710	20,000	--	15	0.010 U	0.010 U	0.010 U	0.010 U	0.020 U	NA	NA	NA
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	0.002 U	0.002 U	0.002 U	0.002 U	0.004 U	NA	NA	NA
n-Propylbenzene	240	--	--	3300 (f)	--	--	19,000	9300	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
Toluene	520	12	200	1440	--	--	66,000	38,000	--	--	180	0.001 U	0.001 U	0.001 U	0.001 U	0.002 U	NA	NA	NA
HYDROCARBONS (mg/kg)																			
NWTPH-HCID																			
Gasoline	--	--	--	--	--	--	22,000	13,000	--	80,000	110	22.5 U	22.0 U	22.0 U	22.0 U	22.0 U	NA	NA	NA
Kerosene	--	--	--	--	--	--	--	--	--	--	--	58.2 U	54.9 U	54.9 U	54.9 U	54.9 U	NA	NA	NA
Diesel	--	--	--	--	--	--	70,000	23,000	--	--	--	58.2 U	54.9 U	54.9 U	54.9 U	Diesel	NA	NA	NA
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	112 U	110 U	110 U	110 U	Lube Oil	NA	NA	NA
NWTPH-Dx (mg/kg)																			
TPH-Diesel Range	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	NA	NA	NA	574	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	1120	NA	NA	NA
NWTPH-G (mg/kg)																			
TPH-Gasoline Range	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/kg)																			
Arsenic (7060)	1.6 (h)	29	10 (i)	29 (i)	10 (i)	60 (i)	5 (j)	--	--	--	--	3.05	2.54	2.07	2.60	3.59	NA	NA	NA
Chromium (6010)	400	38	1 (h)(k)	340,000 (k)	4 (h)(k)	0.4 (h)(k)	23.1	--	--	--	--	20	16.5	16.7	20.6	17.9	NA	NA	NA
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	12.7	14.0	13.4	14.6	20.3	NA	NA	NA
Lead (7421)	600	--	50	4000	16	500	9	750	250	750	30	1.92 U	3.10	2.04	9.31	35.2	NA	NA	1.67 U
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	19.9	18.6	17.4	19.2	19.5	NA	NA	NA
Zinc (6010)	101,000	12,000	50 (b)	20,000	60 (b)	200	60.2	--	--	--	--	49.9	63.0	49.3	82.7	87.9	NA	NA	52.1
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7441)	310	--	0.3	73	1.6	0.1	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE C-4a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	1-1.5	
	EPA Region 9 PRGs Oregon SLVs Background					Risk-Based Concentrations					COMP	COMP	COMP	COMP	G10-4 (1-1.5)	G10-5 (1-1.5)	G11-3 (1-1.5)		
						Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater									
						Occupational	Construction Worker	Excavation Worker	Occupational	Occupational									
		Industrial	DAF=20	Plants	Mammals	Birds	Inverts						BA7 (1-1.5) 0108196-21 8/27/2001	BA8 (1-1.5) 108196-17 8/27/2001	BA9 (1-1.5) 0108182-24 8/23/2001	BA10 (1-1.5) 0108196-13 8/27/2001	BA11 (1-1.5) 0108196-03 8/27/2001	G10-4 (1-1.5) 0309196-28 9/29/2003	G10-5 (1-1.5) 0308196-45 9/29/2003
BETX (mg/kg)																			
EPA Method SW8021B																			
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	180	NA	NA	NA	NA	NA	NA	NA	
Xylenes, total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA	NA	NA	
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	NA	NA	NA	NA	NA	
o-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	
DIOXINS AND FURANS (ng/kg)																			
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	

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Landau Associates

TABLE C-4b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (>3 FT)
PHASE III RI

						5-5.5	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
SCREENING CRITERIA						COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP	COMP
Risk-Based Concentrations																		
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs	Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater													
			Excavation Worker	Occupational	Occupational	BA11 (5-5.5) 0108196-10 8/27/2001	G6 (8.5-11.5) 0108189-15 8/24/2001	G7 (6.5-7.5) 0108196-03 8/27/2001	G10 (10.5-12) 0108189-20 8/24/2001	G11 (5.5-6.5) 0108196-06 8/27/2001	G15 (8-13) 0108172-47 8/22/2001	G17 (13-15) 0108172-18 8/21/2001	G18 (12-15) 0108172-39 8/22/2001	G19 (9-11) 0108172-51 8/22/2001	BA7 (10.5-11.5) 0108196-23 8/27/2001	BA8 (9-13) 108196-19 8/27/2001	BA9 (13.5-14.5) 0108182-26 8/23/2001	BA10 (5.5-7.5) 0108196-14 8/27/2001
BETX (mg/kg)																		
EPA Method SW8021B																		
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																		
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-4b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA							CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			COMP	COMP	
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	BA11 (6.5-11)	BA20 (CF)	
			Excavation Worker	Occupational	Occupational	0108196-11 8/27/2001	Dup of BA11 (6.5-11) 0108196-07 8/27/2001	
SEMIVOLATILES (mg/kg)								
EPA Method SW8270								
2,6-Dinitrotoluene	0.0007	--	--	--	--	0.330 U	0.330 U	
2-Methylnaphthalene	84 (b)	--	--	--	--	0.067 U	0.067 U	
Acenaphthene	570	--	--	--	--	0.067 U	0.067 U	
Acenaphthylene	84 (b)	--	--	--	--	0.067 U	0.067 U	
Anthracene	12,000	--	--	--	--	0.067 U	0.067 U	
Benzo(a)anthracene	2	--	590	--	--	0.067 U	0.230 J	
Benzo(a)pyrene	8	--	59	--	--	0.069 J	0.280	
Benzo(b)fluoranthene	5	--	--	--	--	0.075	0.450	
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	0.067 U	0.120 J	
Benzo(k)fluoranthene	49	--	5900	--	--	0.067 U	0.160	
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	0.067 U	0.067 U	
Butylbenzylphthalate	930	--	--	--	--	0.067 U	0.067 U	
Carbazole	0.6	--	--	--	--	0.067 U	0.067 U	
Chrysene	160	--	59,000	--	--	0.075 J	0.230 J	
Dibenz(a,h)anthracene	2	--	59	--	--	0.067 U	0.067 U	
Dibenzofuran	--	--	--	--	--	0.067 U	0.067 U	
Diethylphthalate	3600 (c)	--	--	--	--	0.067 U	0.067 U	
Dimethylphthalate	3600 (c)	--	--	--	--	0.067 U	0.067 U	
Di-n-Butylphthalate	2300	--	--	--	--	0.067 U	0.067 U	
Di-n-Octylphthalate	10,000	--	--	--	--	0.067 U	0.067 U	
Fluoranthene	4300	--	--	--	--	0.069 J	0.420 J	
Fluorene	560	--	--	--	--	0.067 U	0.067 U	
Hexachloroethane	0.5	--	--	--	--	0.130 U	0.130 U	
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	0.067 U	0.100	
Naphthalene	84	--	20,000	--	15	0.130 U	0.130 U	
Pentachlorophenol	0.03	--	--	--	--	0.330 U	0.330 U	
Phenanthrene	84 (b)	--	--	--	--	0.100	0.075	
Pyrene	4200	--	--	--	--	0.120 J	0.400 J	
SEMIVOLATILES (mg/kg)								
EPA Method SW8270SIM								
Acenaphthene	570	--	--	--	--	NA	NA	
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	
Anthracene	12,000	--	--	--	--	NA	NA	
Benzo(a)anthracene	2	--	590	--	--	NA	NA	
Benzo(a)pyrene	8	--	59	--	--	NA	NA	
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	
Chrysene	160	--	59,000	--	--	NA	NA	
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	
Fluoranthene	4300	--	--	--	--	NA	NA	
Fluorene	560	--	--	--	--	NA	NA	
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	
Naphthalene	84	--	20,000	--	15	NA	NA	
Phenanthrene	84 (b)	--	--	--	--	NA	NA	
Pyrene	4200	--	--	--	--	NA	NA	
CHLORINATED PHENOLS (mg/kg)								
Method 8040/8270SIM								
Pentachlorophenol	0.03	--	--	--	--	NA	NA	

BZTO104(e)023465

TABLE C-4b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (>3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA					CF	CF
	EPA Region 9 PRGs	Background	Risk-Based Concentrations			COMP	COMP
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	BA11 (6.5-11) 0106196-11 8/27/2001	BA20 (CF) Dup of BA11 (6.5-11) 0106196-07 8/27/2001
	DAF=20		Excavation Worker	Occupational	Occupational		
VOLATILES (mg/kg)							
EPA Method SW8260							
1,2,4-Trimethylbenzene	--	--	40,000	790	55	0.002 U	0.001 U
1,2-Dichloromethane	--	--	7.1	1.7	0.000059	0.001 U	0.001 U
1,3,5-Trimethylbenzene	--	--	40,000	--	12	0.002 U	0.001 U
2-Butanone	--	--	--	--	--	0.005 U	0.005 U
4-Isopropyltoluene	12 (a)	--	--	--	--	0.002 U	0.001 U
Aniline	16	--	--	--	--	12,300 U	0.0238 U
Benzene	0.03	--	9400	48	0.052	0.001 U	0.001 U
Carbon Disulfide	32	--	--	--	--	0.001 U	0.001 U
Ethylbenzene	13	--	--	--	--	0.001 U	0.001 U
Isopropylbenzene	--	--	--	--	--	0.001 U	0.001 U
m,p-Xylene	210 (g)	--	--	--	--	0.002 U	0.002 U
Methyl Iodide	--	--	--	--	--	0.001 U	0.001 U
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA
Naphthalene	84	--	20,000	--	15	0.020 U	0.010 U
n-Butylbenzene	--	--	--	--	--	0.004 U	0.002 U
n-Propylbenzene	--	--	--	--	--	0.002 U	0.001 U
o-Xylene	210 (g)	--	--	--	100 (g)	0.001 U	0.001 U
sec-Butylbenzene	--	--	--	--	--	0.002 U	0.001 U
tert-Butylbenzene	--	--	--	--	--	0.002 U	0.001 U
Toluene	12	--	--	--	120	0.001 U	0.001 U
HYDROCARBONS (mg/kg)							
NWTPH-HCID							
Gasoline	--	--	--	80,000	110	23.3 U	24.1 U
Kerosene	--	--	--	--	--	58.1 U	60.2 U
Diesel	--	--	--	--	--	58.1 U	60.2 U
Lube Oil	--	--	--	--	--	116 U	120 U
NWTPH-Dx (mg/kg)							
TPH-Diesel Range	--	--	--	--	--	NA	NA
TPH-Kerosene Range	--	--	--	--	--	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	NA	NA
NWTPH-G (mg/kg)							
TPH-Gasoline Range	--	--	--	80,000	110	NA	NA
PRIORITY POLLUTANT							
METALS (mg/kg)							
Arsenic (7060)	29	5 (j)	--	--	--	2.47	1.99
Chromium (6010)	38	23.4	--	--	--	17.5	17.2
Copper (6010)	--	19.1	--	--	--	15.1	15.1
Lead (7421)	--	250	--	--	30	2.25	1.75 U
Nickel (6010)	130	21.4	--	--	--	19.0	18.0
Zinc (6010)	12,000	60.2	--	--	--	52.0	49.7
Cadmium (6010)	8	--	--	--	--	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA

TABLE C-4b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
EASTERN PORTION OF PHASE III STUDY AREA (>3 FT)
PHASE III RI

						CF	CF
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA					COMP BA11 (6.5-11) 0108196-11 8/27/2001	COMP BA20 (CF) Dup of BA11 (6.5-11) 0108196-07 8/27/2001
	EPA Region 9 PRGs DAF-20	Background	Risk-Based Concentrations				
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater		
			Excavation Worker	Occupational	Occupational		
BETX (mg/kg) EPA Method SW8021B							
Benzene	0.03	--	9400	48	0.052	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA
Toluene	12	--	--	--	180	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA
p-Xylene	210 (g)	--	--	--	100 (g)	NA	NA
DIOXINS AND FURANS (ng/kg) Total TEQ	--	--	--	--	--	NA	NA

TABLE C-5a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
ASPHALT ROAD AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										COMP G20 (0-0.5) 0108208-02 8/28/2001	COMP G20 (1-1.5) 0108208-03 8/28/2001		
	EPA Region 9 PRGs		Oregon SLVs				Background	Risk-Based Concentrations						
	Industrial	DAF-20	Plants	Mammals	Birds	Inverts		Soil Ingestion, Dermal Contact, and Inhalation					Volatilization to Outdoor Air	Leaching to Groundwater
								Occupational	Construction Worker	Excavation Worker			Occupational	Occupational
SEMIVOLATILES (mg/kg) EPA Method SW8270														
2,6-Dinitrotoluene	620	0.0007	200 (a)	1440 (a)	--	--	--	--	--	--	--	0.330 U	0.330 U	
2-Methylnaphthalene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	0.067 U	0.067 U	
Acenaphthene	29000	570	20	--	--	--	--	41,000	16,000	--	--	0.067 U	0.067 U	
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	0.067 U	0.067 U	
Anthracene	100,000	12,000	--	--	--	--	--	--	90,000	--	--	0.200	0.067 U	
Benzo(a)anthracene	2.1	2	--	--	--	--	--	2.7	21	590	--	0.320	0.067 U	
Benzo(a)pyrene	0.21	8	--	125	--	--	--	0.27	2.1	59	--	0.590	0.067 U	
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	1.400	0.067 U	
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	0.410	0.067 U	
Benzo(k)fluoranthene	21	49	--	--	--	--	--	27	210	5900	--	0.390	0.067 U	
bis(2-Ethylhexyl)phthalate	120	3600 (c)	--	1020	4.5	--	--	--	--	--	--	0.130	0.130	
Butylbenzophthalate	100,000	930	--	1020 (d)	4.6 (d)	--	--	--	--	--	--	0.067 U	0.067 U	
Carbazole	86	0.6	--	--	--	--	--	--	--	--	--	0.067 U	0.067 U	
Chrysene	210	160	--	--	--	--	--	270	2100	59,000	--	0.390	0.067 U	
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	--	0.27	2.1	59	--	0.067 U	0.067 U	
Dibenz(b,f)anthracene	1900	--	--	0.002	--	--	--	--	--	--	--	0.067 U	0.067 U	
Diethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	0.067 U	0.067 U	
Diethylterephthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	0.067 U	0.067 U	
Di-n-Butylphthalate	62,000	2300	200	30,000	0.45	--	--	--	--	--	--	0.067 U	0.067 U	
Di-n-Octylphthalate	25,000	15,000	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	0.067 U	0.067 U	
Fluoranthene	22,000	4300	--	--	--	--	--	29,000	8900	--	--	0.750	0.067 U	
Fluorene	26,000	660	--	--	30	--	--	35,000	14,000	--	--	0.067 U	0.067 U	
Hexachloroethane	120	0.5	--	--	--	--	--	--	--	--	--	0.130 U	0.130 U	
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	--	2.7	21	590	--	0.330	0.067 U	
Naphthalene	190	84	10	3900	--	--	--	770	710	20,000	--	15	0.067 U	
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	0.330 U	0.330 U	
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	0.200	0.067 U	
Pyrene	29,000	4200	--	--	--	--	--	21,000	6700	--	--	0.830	0.067 U	
SEMIVOLATILES (mg/kg) EPA Method SW8270SIM														
Acenaphthene	29,000	570	20	--	--	--	--	41,000	16,000	--	--	NA	NA	
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	
Anthracene	100,000	12,000	--	--	--	--	--	--	90,000	--	--	NA	NA	
Benzo(a)anthracene	2.1	2	--	--	--	--	--	2.7	21	590	--	NA	NA	
Benzo(a)pyrene	0.21	8	--	125	--	--	--	0.27	2.1	59	--	NA	NA	
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	NA	NA	
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	
Benzo(k)fluoranthene	21	49	--	--	--	--	--	27	210	5900	--	NA	NA	
Chrysene	210	160	--	--	--	--	--	270	2100	59,000	--	NA	NA	
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	--	0.27	2.1	59	--	NA	NA	
Fluoranthene	22,000	4300	--	--	--	--	--	29,000	8900	--	--	NA	NA	
Fluorene	26,000	660	--	--	30	--	--	35,000	14,000	--	--	NA	NA	
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	--	2.7	21	590	--	NA	NA	
Naphthalene	190	84	10	3900	--	--	--	770	710	20,000	--	15	NA	
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	NA	NA	
Pyrene	29,000	4200	--	--	--	--	--	21,000	6700	--	--	NA	NA	
CHLORINATED PHENOLS (mg/kg) Method 8040/8270SIM														
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	NA	NA	

TABLE C-5a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
ASPHALT ROAD AREA (0-3 FT)
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	1-1.5		
	EPA Region 9 PRGs		Oregon SLVs				Background	Risk-Based Concentrations			COMP G20 (0-0.5) 0108209-02 8/28/2001	COMP G20 (1-1.5) 0108208-03 8/28/2001		
	Industrial	DAF=20	Plants	Mammals	Birds	Inverts		Soil Ingestion, Dermal Contact, and Inhalation					Volatilization to Outdoor Air	Leaching to Groundwater
								Occupational	Construction Worker	Excavation Worker	Occupational	Occupational		
VOLATILES (mg/kg)														
EPA Method SW8260														
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	--	1500	1400	40,000	790	55	0.001 U	0.001 U
1,2-Dibromochlorane	0.073	--	--	3300 (f)	--	--	--	0.033	0.25	7.1	1.7	0.000069	0.001 U	0.001 U
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	--	1500	1400	40,000	--	12	0.001 U	0.001 U
2-Butanone	110,000	--	--	3300 (f)	--	--	--	--	--	--	--	--	0.005 U	0.005 U
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	--	0.001 U	0.001 U
Acetone	53,000	16	--	1250	--	--	--	--	--	--	--	--	0.005 U	0.005 U
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	0.001 U	0.001 U
Carbon Disulfide	720	32	--	3300 (f)	--	--	--	--	--	--	--	--	0.001 U	0.001 U
Ethylbenzene	400	13	--	3300 (f)	--	--	--	74,000	26,000	--	--	--	0.001 U	0.001 U
Isopropylbenzene	2000	--	--	3300 (f)	--	--	--	51,000	24,000	--	--	--	0.001 U	0.001 U
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	0.002 U	0.002 U
Methyl iodide	--	--	--	--	--	--	--	--	--	--	--	--	0.001 U	0.001 U
Methyl tert-butyl ether	70	--	--	--	--	--	--	760	9000	--	720	0.30	NA	NA
Naphthalene	190	84	10	3300	--	--	--	770	710	20,000	--	15	0.010 U	0.010 U
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	--	0.002 U	0.002 U
n-Propylbenzene	240	--	--	3300 (f)	--	--	--	19,000	3300	--	--	--	0.001 U	0.001 U
o-Xylene	420 (g)	210 (g)	1	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	0.001 U	0.001 U
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	--	0.001 U	0.001 U
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	--	0.001 U	0.001 U
Toluene	520	12	200	1440	--	--	--	68,000	39,000	--	--	180	0.001 U	0.001 U
HYDROCARBONS (mg/kg)														
NWTPH-HCID														
Gasoline	--	--	--	--	--	--	--	22,000	13,000	--	80,000	110	21.3 U	21.7 U
Kerosene	--	--	--	--	--	--	--	--	--	--	--	--	53.2 U	54.3 U
Diesel	--	--	--	--	--	--	--	70,000	23,000	--	--	--	53.2 U	54.3 U
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	--	Lube Oil	109 U
NWTPH-Dx (mg/kg)														
TPH-Diesel Range	--	--	--	--	--	--	--	70,000	23,000	--	--	--	31.9 U	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	--	301	NA
NWTPH-G (mg/kg)														
TPH-Gasoline Range	--	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	NA
PRIORITY POLLUTANT														
METALS (mg/kg)														
Arsenic (7060)	1.6 (h)	29	10 (i)	29 (i)	10 (i)	60 (i)	5 (j)	--	--	--	--	--	6.73	2.47
Chromium (6010)	450	28	100 (k)	340,000 (k)	4 (l)(k)	0.4 (h)(k)	23.1	--	--	--	--	--	35.4	14.4
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	--	176	12.8
Lead (7421)	900	--	50	4000	16	500	9	750	750	750	--	30	67.8	2.00 U
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	--	23.4	18.3
Zinc (6010)	100,000	12,000	50 (h)	20,000	60 (h)	200	60.2	--	--	--	--	--	210	45.7
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	--	NA	NA
Mercury (7471)	310	--	0.3	73	11.6	0.1	--	--	--	--	--	--	NA	NA

TABLE C-5a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
ASPHALT ROAD AREA (0-3 FT)
PHASE III RI

											0-0.5	1-1.5		
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										COMP G20 (0-0.5) 0108208-02 8/28/2001	COMP G20 (1-1.5) 0108208-03 8/28/2001		
	EPA Region 9 PRGs Industrial DAF=20		Oregon SLVs Plants Mammals Birds Inverts				Background	Risk-Based Concentrations						
								Soil Ingestion, Dermal Contact, and Inhalation					Volatilization to Outdoor Air	Leaching to Groundwater
								Construction		Excavation				
								Occupational	Worker	Worker			Occupational	Occupational
BETX (mg/kg)														
EPA Method SW8021B														
Benzene	1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	NA	NA	
Ethylbenzene	400	13	--	3300 (f)	--	--	74,000	28,000	--	--	--	NA	NA	
Toluene	520	12	200	1440	--	--	68,000	39,000	--	--	160	NA	NA	
Xylenes, Total	420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	NA	
o-Xylene	420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	NA	
DIOXINS AND FURANS (ng/kg)														
Total TEQ	--	--	--	--	--	--	--	--	--	--	--	NA	NA	

BZTO104(e)023470

TABLE C-5b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
ASPHALT ROAD AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			COMP G20 (10.5-14.5) 0108208-05 8/28/2001	COMP G28 (CF) Dup of G20 (10.5-14.5) 0108208-01 8/28/2001
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater		
			Excavation Worker	Occupational	Occupational		
SEMIVOLATILES (mg/kg)							
EPA Method SW8270							
2,6-Dinitrotoluene	0.0007	--	--	--	--	0.330 U	0.330 U
2-Methylnaphthalene	84 (b)	--	--	--	--	0.067 U	0.067 U
Acenaphthene	570	--	--	--	--	0.067 U	0.067 U
Acenaphthylene	84 (b)	--	--	--	--	0.067 U	0.067 U
Anthracene	12,000	--	--	--	--	0.067 U	0.067 U
Benzo(a)anthracene	2	--	590	--	--	0.067 U	0.067 U
Benzo(a)pyrene	8	--	59	--	--	0.067 U	0.067 U
Benzo(b)fluoranthene	5	--	--	--	--	0.067 U	0.067 U
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	0.067 U	0.067 U
Benzo(k)fluoranthene	49	--	5900	--	--	0.067 U	0.067 U
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	0.067 U	0.067 U
Butylbenzylphthalate	930	--	--	--	--	0.067 U	0.067 U
Carbazole	0.6	--	--	--	--	0.067 U	0.067 U
Chrysene	160	--	59,000	--	--	0.067 U	0.067 U
Dibenz(a,h)anthracene	2	--	59	--	--	0.067 U	0.067 U
Dibenzofuran	--	--	--	--	--	0.067 U	0.067 U
Diethylphthalate	3600 (c)	--	--	--	--	0.067 U	0.067 U
Dimethylphthalate	3600 (c)	--	--	--	--	0.067 U	0.067 U
Di-n-Butylphthalate	2300	--	--	--	--	0.067 U	0.067 U
Di-iso-Octylphthalate	10,000	--	--	--	--	0.067 U	0.067 U
Fluoranthene	4300	--	--	--	--	0.067 U	0.067 U
Fluorene	560	--	--	--	--	0.067 U	0.067 U
Hexachloroethane	0.5	--	--	--	--	0.130 U	0.130 U
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	0.067 U	0.067 U
Naphthalene	84	--	20,000	--	15	0.067 U	0.067 U
Pentachlorophenol	0.03	--	--	--	--	0.330 U	0.330 U
Phenanthrene	84 (b)	--	--	--	--	0.067 U	0.067 U
Pyrene	4200	--	--	--	--	0.067 U	0.067 U
SEMIVOLATILES (mg/kg)							
EPA Method SW8270SIM							
Acenaphthene	570	--	--	--	--	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA
Anthracene	12,000	--	--	--	--	NA	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA
Chrysene	160	--	59,000	--	--	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA
Fluoranthene	4300	--	--	--	--	NA	NA
Fluorene	560	--	--	--	--	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA
Naphthalene	84	--	20,000	--	16	NA	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA
Pyrene	4200	--	--	--	--	NA	NA
CHLORINATED PHENOLS (mg/kg)							
Method 8040/8270SIM							
Pentachlorophenol	0.03	--	--	--	--	NA	NA

TABLE C-5b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
ASPHALT ROAD AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF	
Sample Identification: Laboratory Identification: Date Collected:		EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			COMP G20 (10.5-14.5) 0108208-05 8/28/2001	COMP G2B (CF) Dup of G20 (10.5-14.5) 0108208-01 8/28/2001
				Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater		
				Excavation Worker	Occupational	Occupational		
VOLATILES (mg/kg)								
EPA Method SW8260								
1,2,4-Trimethylbenzene	--	--	--	40,000	790	55	0.001 U	0.001 U
1,2-Dibromethane	--	--	--	7.1	1.7	0.000059	0.001 U	0.001 U
1,3,5-Trimethylbenzene	--	--	--	40,000	--	12	0.001 U	0.001 U
2-Butanone	--	--	--	--	--	--	0.005 U	0.005 U
4-Isopropyltoluene	12 (a)	--	--	--	--	--	0.001 U	0.001 U
Acetone	16	--	--	--	--	--	0.005 U	0.005 U
Benzene	0.03	--	--	9400	48	0.052	0.001 U	0.001 U
Carbon Disulfide	32	--	--	--	--	--	0.001 U	0.001 U
Ethylbenzene	13	--	--	--	--	--	0.001 U	0.001 U
Isopropylbenzene	--	--	--	--	--	--	0.001 U	0.001 U
m,p-Xylene	210 (g)	--	--	--	--	--	0.002 U	0.002 U
Methyl iodide	--	--	--	--	--	--	0.001 U	0.001 U
Methyl tert-butyl ether	--	--	--	--	720	0.30	NA	NA
Naphthalene	14	--	--	20,000	--	15	0.010 U	0.010 U
n-Butylbenzene	--	--	--	--	--	--	0.002 U	0.002 U
n-Propylbenzene	--	--	--	--	--	--	0.001 U	0.001 U
o-Xylene	210 (g)	--	--	--	--	100 (g)	0.001 U	0.001 U
sec-Butylbenzene	--	--	--	--	--	--	0.001 U	0.001 U
tert-Butylbenzene	--	--	--	--	--	--	0.001 U	0.001 U
Toluene	12	--	--	--	--	180	0.001 U	0.001 U
HYDROCARBONS (mg/kg)								
NWTPH-HCID								
Gasoline	--	--	--	--	80,000	110	23.5 U	23.5 U
Kerosene	--	--	--	--	--	--	58.8 U	58.8 U
Diesel	--	--	--	--	--	--	58.8 U	58.8 U
Lube Oil	--	--	--	--	--	--	118 U	118 U
NWTPH-Dx (mg/kg)								
TPH-Diesel Range	--	--	--	--	--	--	NA	NA
TPH-Kerosene Range	--	--	--	--	--	--	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	NA	NA
NWTPH-G (mg/kg)								
TPH-Gasoline Range	--	--	--	--	80,000	110	NA	NA
PRIORITY POLLUTANT								
METALS (mg/kg)								
Arsenic (7060)	29	5 (j)	--	--	--	--	3.03	2.67
Chromium (6010)	38	23.1	--	--	--	--	14.1	14.2
Copper (6010)	--	19.1	--	--	--	--	12.7	12.7
Lead (7421)	--	9	750	--	--	30	2.00 U	1.79 U
Nickel (6010)	130	21.4	--	--	--	--	16.1	16.1
Zinc (6010)	12,000	60.2	--	--	--	--	43.3	45.9
Cadmium (6010)	8	--	--	--	--	--	NA	NA
Mercury (7421)	--	--	--	--	--	--	NA	NA

TABLE C-5b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
ASPHALT ROAD AREA (>3 FT)
PHASE III RI

SCREENING CRITERIA						CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Background	Risk-Based Concentrations			COMP	COMP
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	G20 (10.5-14.5)	G28 (CF)
			Excavation Worker	Occupational	Occupational	0108208-05 8/28/2001	Dup of G20 (10.5-14.5) 0108208-01 8/28/2001
BETX (mg/kg)							
EPA Method SW8021B							
Benzene	0.03	--	9400	48	0.052	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA
Toluene	12	--	--	--	180	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA
DIOXINS AND FURANS (ng/kg)							
Total TEQ	--	--	--	--	--	NA	NA

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TABLE C-6a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (0-3 FT)

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	1-1.5	
						Risk-Based Concentrations										
	EPA Region 9 PRGs		Oregon SLVs			Site-Specific Background	Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater					
	Industrial	DAF=20	Plants	Mammals	Birds		Inverts	Occupational	Construction Worker	Excavation Worker	Occupational	Occupational	LB16 (0-0.5) R923AY 03/12/97	LS1(0-0.5) Q650A 10/23/96	LS2(0-0.5) Q650B 10/23/96	LW1D (0.0-0.5) R950O 03/14/97
SEMIVOLATILES (mg/kg) EPA Method SW8270																
2,6-Dinitrotoluene	620	0.0007	200 (a)	1440 (a)	--	--	--	--	--	--	--	0.38 U	0.36 U	NA	NA	NA
2-Methylnaphthalene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	0.076 U	0.073 U	NA	NA	NA
Acenaphthene	29000	570	20	--	--	--	--	41,000	16,000	--	--	0.076 U	0.073 U	NA	NA	NA
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	0.076 U	0.073 U	NA	NA	NA
Anthracene	100,000	12,000	--	--	--	--	--	--	90,000	--	--	0.076 U	0.073 U	NA	NA	NA
Benzo(a)anthracene	2.1	2	--	--	--	--	--	2.7	2.1	590	--	0.16	0.073 U	NA	NA	NA
Benzo(a)pyrene	0.21	8	--	125	--	--	--	0.27	2.1	59	--	0.26	0.073 U	NA	NA	NA
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	0.22	0.073 U	NA	NA	NA
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	0.4	0.073 U	NA	NA	NA
Benzo(k)fluoranthene	21	49	--	--	--	--	--	27	210	5900	--	0.15	0.073 U	NA	NA	NA
bis(2-Ethylhexyl)phthalate	120	3600 (c)	--	1020	4.5	--	--	--	--	--	--	0.076 U	0.31	NA	NA	NA
Butylbenzylphthalate	100,000	930	--	1020 (d)	1.5 (d)	--	--	--	--	--	--	0.076 U	0.073 U	NA	NA	NA
Carbazole	86	0.6	--	--	--	--	--	--	--	--	--	0.076 U	0.073 U	NA	NA	NA
Chrysene	210	160	--	--	--	--	--	270	2100	59,000	--	0.24	0.073 U	NA	NA	NA
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	--	0.27	2.1	59	--	0.079	0.073 U	NA	NA	NA
Dibenzofuran	1600	--	--	0.002	--	--	--	--	--	--	--	0.076 U	0.073 U	NA	NA	NA
Diethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	0.076 U	0.073 U	NA	NA	NA
Dimethylphthalate	100,000	3600 (c)	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	0.076 U	0.073 U	NA	NA	NA
Di-n-Butylphthalate	62,000	2300	200	30,000	0.45	--	--	--	--	--	--	0.076 U	0.073 U	NA	NA	NA
Di-n-Octylphthalate	25,000	10,000	200 (e)	30,000 (e)	0.45 (e)	--	--	--	--	--	--	0.076 U	0.073 U	NA	NA	NA
Fluoranthene	22,000	4300	--	--	--	--	--	29,000	8900	--	--	0.33	0.073 U	NA	NA	NA
Fluorene	26,000	560	--	--	30	--	--	35,000	12,000	--	--	0.076 U	0.073 U	NA	NA	NA
Hexachloroethane	120	0.5	--	--	--	--	--	--	--	--	--	0.15 U	0.15 U	NA	NA	NA
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	--	2.7	21	590	--	0.26	0.073 U	NA	NA	NA
Naphthalene	190	84	10	3900	--	--	--	770	710	20,000	--	15	0.076 U	0.073 U	NA	NA
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	0.36 U	0.36 U	NA	NA	NA
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	0.14	0.073 U	NA	NA	NA
Pyrene	29,000	4200	--	--	--	--	--	21,000	6700	--	--	0.68	0.078 U	NA	NA	NA
SEMIVOLATILES (mg/kg) EPA Method SW8270SIM																
Acenaphthene	29,000	570	20	--	--	--	--	41,000	16,000	--	--	NA	NA	NA	0.0071 U	NA
Acenaphthylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	NA	0.22	NA
Anthracene	100,000	12,000	--	--	--	--	--	--	90,000	--	--	NA	NA	NA	0.11	NA
Benzo(a)anthracene	2.1	2	--	--	--	--	--	2.7	2.1	590	--	NA	NA	NA	0.24	NA
Benzo(a)pyrene	0.21	8	--	125	--	--	--	0.27	2.1	59	--	NA	NA	NA		NA
Benzo(b)fluoranthene	2.1	5	--	--	--	--	--	--	--	--	--	NA	NA	NA	0.23	NA
Benzo(g,h,i)perylene	190 (b)	84 (b)	10 (b)	3900 (b)	--	--	--	--	--	--	--	NA	NA	NA	0.42	NA
Benzo(k)fluoranthene	21	49	--	--	--	--	--	27	210	5900	--	NA	NA	NA	0.15	NA
Chrysene	210	160	--	--	--	--	--	270	2100	59,000	--	NA	NA	NA	0.22	NA
Dibenz(a,h)anthracene	0.21	2	--	--	--	--	--	0.27	2.1	59	--	NA	NA	NA	0.085	NA
Fluoranthene	22,000	4300	--	--	--	--	--	29,000	8900	--	--	NA	NA	NA	0.31	NA
Fluorene	26,000	560	--	--	30	--	--	35,000	12,000	--	--	NA	NA	NA	0.0071 U	NA
Indeno(1,2,3-cd)pyrene	2.1	14	--	--	--	--	--	2.7	21	590	--	NA	NA	NA	0.27	NA
Naphthalene	190	84	10	3900	--	--	--	770	710	20,000	--	15	NA	NA	NA	0.0071 U
Phenanthrene	190 (b)	84 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	0.09	NA
Pyrene	29,000	4200	--	--	--	--	--	21,000	6700	--	--	NA	NA	NA	0.41	NA
CHLORINATED PHENOLS (mg/kg) Method 8040/8270SIM																
Pentachlorophenol	9.0	0.03	3	30	--	4	--	--	--	--	--	0.14	0.05 U	0.2 U	0.034 U	0.0067 U

TABLE C-6a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (0-3 FT)

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										0-0.5	0-0.5	0-0.5	0-0.5	1-1.5		
	EPA Region 9 PRGs Industrial DAF=20		Oregon SLVs Plants Mammals Birds Inverts				Site-Specific Background	Risk-Based Concentrations					LB16 (0-0.5) R923AY 03/12/97	LS1(0-0.5) Q650A 10/23/96	LS2(0-0.5) Q650B 10/23/96	LW1D (0.0-0.5) R950O 03/14/97	LB10(0.5-2.0) Q650AL 10/24/96
								Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air	Leaching to Groundwater					
								Occupational	Construction Worker	Excavation Worker	Occupational	Occupational					
VOLATILES (mg/kg)																	
EPA Method SW8260																	
1,2,4-Trimethylbenzene	170	--	--	3300 (f)	--	--	--	1500	1400	40,000	790	55	NA	NA	NA	NA	NA
1,2-Dibromochloroethane	0.073	--	--	--	--	--	--	0.033	0.26	7.1	1.7	0.000059	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	70	--	--	3300 (f)	--	--	--	1500	1400	40,000	--	12	NA	NA	NA	NA	NA
2-Butanone	110,000	--	--	--	--	--	--	--	--	--	--	--	NA	0.0052 U	NA	NA	NA
4-Isopropyltoluene	520 (a)	12 (a)	200 (a)	1440 (a)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Acetone	54,000	16	--	1250	--	--	--	--	--	--	--	--	NA	0.0052 U	NA	NA	NA
Benzene	1.4	0.03	--	3300	--	--	--	34	340	9400	48	0.052	NA	0.001 U	NA	NA	NA
Carbon Disulfide	720	32	--	--	--	--	--	--	--	--	--	--	NA	0.001 U	NA	NA	NA
Ethylbenzene	400	13	--	3300 (f)	--	--	--	74,000	28,000	--	--	--	NA	0.001 U	NA	NA	NA
Isopropylbenzene	2000	--	--	3300 (f)	--	--	--	51,000	34,000	--	--	--	NA	NA	NA	NA	NA
m,p-Xylene	420 (g)	210 (g)	--	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	NA	0.001 U	NA	NA	NA
Methyl Iodide	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Methyl tert-butyl ether	70	--	--	--	--	--	--	760	9000	--	720	0.30	NA	NA	NA	NA	NA
Naphthalene	190	64	10	3300	--	--	--	770	710	20,000	--	15	NA	NA	NA	NA	NA
n-Butylbenzene	240	--	--	3300 (f)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
n-Propylbenzene	240	--	--	3300 (f)	--	--	--	19,000	9300	--	--	--	NA	NA	NA	NA	NA
o-Xylene	420 (g)	210 (g)	1	--	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	NA	0.001 U	NA	NA	NA
sec-Butylbenzene	220	--	--	3300 (f)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
tert-Butylbenzene	390	--	--	3300 (f)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Toluene	520	12	200	1440	--	--	--	68,000	39,000	--	--	190	NA	0.001 U	NA	NA	NA
HYDROCARBONS (mg/kg)																	
NWTPH-HCID																	
Gasoline	--	--	--	--	--	--	--	22,000	13,000	--	80,000	110	NA	20 U	20 U	NA	20 U
Kerosene	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	70,000	23,000	--	--	--	NA	140	35	NA	25 U
Lube Oil	--	--	--	--	--	--	--	--	--	--	--	--	NA	420	130	NA	60 U
NWTPH-Dx (mg/kg)																	
TPH-Diesel Range	--	--	--	--	--	--	--	70,000	23,000	--	--	--	45	160	NA	85	NA
TPH-Kerosene Range	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																	
TPH-Gasoline Range	--	--	--	--	--	--	--	22,000	13,000	--	80,000	110	5.0 U	NA	NA	5.0 U	NA
PRIORITY POLLUTANT METALS (mg/kg)																	
Arsenic (7060)	1.6 (h)	29	10 (l)	29 (l)	10 (l)	60 (l)	5 (l)	--	--	--	--	--	NA	6 U	NA	NA	NA
Chromium (6010)	450	38	1 (h)(k)	340,000 (k)	4 (h)(k)	0.4 (h)(k)	23.1	--	--	--	--	--	NA	18.4	NA	NA	NA
Copper (6010)	41,000	--	100	390	190	50	19.1	--	--	--	--	--	350	26.3	NA	NA	NA
Lead (7421)	800	--	50	4000	16	500	9	750	750	750	--	30	NA	26	NA	NA	NA
Nickel (6010)	20,000	130	30	625	320	200	21.4	--	--	--	--	--	NA	21	NA	NA	NA
Zinc (6010)	100,000	12,000	50 (h)	20,000	60 (h)	200	60.2	--	--	--	--	--	143	71.9	NA	NA	NA
Cadmium (6010)	450	8	4	125	6	20	--	--	--	--	--	--	NA	0.3	NA	NA	NA
Mercury (7471)	310	--	0.0	75	1.5	0.1	--	--	--	--	--	--	NA	0.05 U	NA	NA	NA

TABLE C-6a
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (0-3 FT)

											0-0.5	0-0.5	0-0.5	0-0.5	1-1.5		
SCREENING CRITERIA																	
Sample Identification: Laboratory Identification: Date Collected:		EPA Region 9 PRGs Oregon SLVs Industrial DAF=20 Plants Mammals Birds Inverts					Site-Specific Background	Risk-Based Concentrations				LB16 (0-0.5) R923AY 03/12/97	LS1(0-0.5) Q650A 10/23/96	LS2(0-0.5) Q650B 10/23/96	LW1D (0.0-0.5) R950O 03/14/97	LB10(0.5-2.0) Q650AL 10/24/96	
								Soil Ingestion, Dermal Contact, and Inhalation			Volatilization to Outdoor Air						Leaching to Groundwater
								Occupational	Construction Worker	Excavation Worker	Occupational						Occupational
BETX (mg/kg)																	
EPA Method SW8021B																	
		1.4	0.03	--	3300	--	--	34	340	9400	48	0.052	0.057 U	NA	NA	0.053 U	NA
		400	13	--	9300 (f)	--	--	74,000	28,000	--	--	--	0.057 U	NA	NA	0.053 U	NA
		520	12	200	1440	--	--	68,000	39,000	--	--	180	0.057 U	NA	NA	0.053 U	NA
		420	210	--	--	--	--	24,000	19,000	--	--	100	NA	NA	NA	NA	NA
		420 (g)	210 (g)	--	--	--	--	24,000 (g)	19,000 (g)	--	--	--	0.057 U	NA	NA	0.053 U	NA
		420 (g)	210 (g)	1	--	--	--	24,000 (g)	19,000 (g)	--	--	100 (g)	0.057 U	NA	NA	0.053 U	NA
DIOXINS AND FURANS (ng/kg)																	
		--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA

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TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	CF	CF	CF	CF	CF	CF
Risk-Based Concentrations																	
Sample Identification:	EPA Region 9	Site-Specific Background	Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	LB6 (3.5-5.0)	LB8(5-6.2)	LB15 (5-6.5)	LB16 (5-6.5)	LB20 (2.5-4.0)	LB24 (2.5-4.0)	LB1(11-12.5)	LB1(15.5-16.5)	LB2(12-13.5)	LB2(18.5-19.5)	LB3(12-13.5)	LB3(17-18)
Laboratory Identification:	PRGs		Excavation Worker	Occupational	Occupational	Q650AH	Q650AI	R923O	R923AZ	R923AJ	S057A	Q650P	Q650Q	Q650S	Q650T	Q650V	Q650X
Date Collected:	DAF=20					10/24/96	10/24/96	03/10/97	03/12/97	03/11/97	03/21/97	10/23/96	10/23/96	10/23/96	10/23/96	10/23/96	10/23/96
SEMIVOLATILES (mg/kg)																	
EPA Method SW8270																	
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4 U	NA
2-Methylnaphthalene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Acenaphthene	570	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Anthracene	12,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Butylbenzylphthalate	930	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Carbazole	0.6	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Chrysene	160	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Dibenzofuran	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Di-n-Butylphthalate	2300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Diisobutylphthalate	10,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Fluoranthene	4300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Fluorene	560	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Hexachloroethane	0.5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.4 U	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
Pyrene	4200	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 U	NA
SEMIVOLATILES (mg/kg)																	
EPA Method SW8270SIM																	
Acenaphthene	570	--	--	--	--	NA	NA	0.0075 U	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	0.0075 U	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	NA	NA	0.0082	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA	0.0075	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA	0.15	0.031	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	0.28	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	0.068	0.0092	0.0089	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	0.21	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	NA	NA	0.19	0.038	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	0.018	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	NA	NA	0.098	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Fluorene	560	--	--	--	--	NA	NA	0.0075 U	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	0.009	0.0084	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	0.0075 U	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA	0.0075 U	0.0076 U	0.0075 U	NA	NA	NA	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	NA	NA	0.16	0.011	0.0075 U	NA	NA	NA	NA	NA	NA	NA
CHLORINATED PHENOLS (mg/kg)																	
Method 8040/8270SIM																	
Pentachlorophenol	0.03	--	--	--	--	0.033	0.0066 U	0.037	0.0071 U	0.7	NA	0.008 U	0.008 U	0.004	0.0083 U	0.05	0.001

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site- Specific Background	SCREENING CRITERIA			5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	CF	CF	CF	CF	CF	CF
			Risk-Based Concentrations			LB6 (3.5-5.0) Q650AH 10/24/96	LB6(5-6.2) Q650AI 10/24/96	LB15 (5-6.5) R923C 03/10/97	LB16 (5-6.5) R923AZ 03/12/97	LB20 (2.5-4.0) R923AJ 03/11/97	LB24 (2.5-4.0) S057A 03/21/97	LB1(11-12.5) Q650P 10/23/96	LB1(15.5-16.5) Q650C 10/23/96	LB2(12-13.5) Q650S 10/23/96	LB2(18.5-19.5) Q650T 10/23/96	LB3(12-13.5) Q650V 10/23/96	LB3(17-18) Q650X 10/23/96
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation Worker	Occupational	Occupational												
VOLATILES (mg/kg)																	
EPA Method SW8260																	
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromomethane	--	--	7.1	1.7	0.000059	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.74 U	NA	NA
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	16	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.96 U	NA	NA
Benzene	0.03	--	9400	48	0.062	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 U	NA	NA
Carbon Disulfide	32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 U	NA	NA
Isopropylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 U	NA	NA
Methyl Isobutyl Ether	--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 U	NA	NA
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.16 U	NA	NA
HYDROCARBONS (mg/kg)																	
NWTPH-HCID																	
Gasoline	--	--	--	80,000	110	20 U	20 U	NA	NA	NA	NA	20 U	20 U	20 U	20 U	1100	20 U
Kerosene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	66	25 U	NA	NA	NA	NA	25 U	25 U	25 U	25 U	790	25 U
Lube Oil	--	--	--	--	--	98	50 U	NA	NA	NA	NA	50 U	50 U	50 U	50 U	50 U	50 U
NWTPH-Dx (mg/kg)																	
TPH-Diesel Range	--	--	--	--	--	NA	NA	5.6 U	56	5.6 U	6.4	NA	NA	NA	NA	280	NA
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																	
TPH-Gasoline Range	--	--	--	80,000	110	NA	NA	5.1 U	5.0 U	5.0 U	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT																	
METALS (mg/kg)																	
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	6 U	NA
Chromium (6010)	38	23.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	20.2	NA
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	18.1	17.8	NA	NA	NA	NA	NA	19.3	NA
Lead (7421)	--	9	750	--	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	5	NA
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	23	NA
Zinc (6010)	12,000	60.2	--	--	--	NA	NA	NA	52.9	54.7	NA	NA	NA	NA	NA	56	NA
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.2 U	NA
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.05 U	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	5-5.5	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site-Specific Background	Risk-Based Concentrations														
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	LB8 (3.5-5.0)	LB8 (5-6.2)	LB15 (5-6.5)	LB16 (5-6.5)	LB20 (2.5-4.0)	LB24 (2.5-4.0)	LB1(11-12.5)	LB1(15.5-16.5)	LB2(12-13.5)	LB2(18.5-19.5)	LB3(12-13.5)	LB3(17-16)
			Excavation Worker	Occupational	Occupational	Q650AH 10/24/96	Q650AI 10/24/96	R923O 03/10/97	R923AZ 03/12/97	R923AJ 03/11/97	S057A 03/21/97	Q650P 10/23/96	Q650Q 10/23/96	Q650S 10/23/96	Q650T 10/23/96	Q650V 10/23/96	Q650X 10/23/96
BETX (mg/kg)																	
EPA Method SW8021B																	
Benzene	0.03	--	9400	48	0.052	NA	NA	0.057 U	0.057 U	0.057 U	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	0.057 U	0.057 U	0.057 U	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	0.057 U	0.057 U	0.057 U	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	0.057 U	0.057 U	0.057 U	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	0.057 U	0.057 U	0.057 U	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																	
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA					CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site-Specific Background	Risk-Based Concentrations			LB4(12-13.5) Q650AS 10/25/96	LB4(17-18) Q650AT 10/25/96	LB6(12-13.5) Q650AE 10/23/96	LB6(17-18) Q650AF 10/23/96	LB7(12-13.5) Q650AW 10/25/96	LB7(17-18) Q650AX 10/25/96	LB10(6.5-8.0) Q650AM 10/24/96	LB11 (12.5-14.2) R923C 03/10/97	LB11 (17-17.6) R923D 03/10/97	LB12 (13.2-14.0) R923F 03/10/97	LB12 (15-16) R923G 03/10/97	LB13 (12.5-14) R923I 03/10/97
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation Worker	Occupational	Occupational												
VOLATILES (mg/kg)																	
EPA Method SW8260																	
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromothane	--	--	7.1	1.7	0.000059	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	--	--	--	--	--	NA	NA	0.0034 U	NA	NA	NA	NA	1.5 U	NA	NA	NA	0.74 U
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	16	--	--	--	--	NA	NA	0.011 U	NA	NA	NA	NA	1.5 U	NA	NA	NA	0.74 U
Benzene	0.03	--	9400	48	0.052	NA	NA	0.0013 U	NA	NA	NA	NA	0.31 U	NA	NA	NA	0.15 U
Carbon Disulfide	32	--	--	--	--	NA	NA	0.0013 U	NA	NA	NA	NA	0.81 U	NA	NA	NA	0.15 U
Ethylbenzene	13	--	--	--	--	NA	NA	0.0013 U	NA	NA	NA	NA	0.81 M	NA	NA	NA	0.38
Isopropylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	0.0013 U	NA	NA	NA	NA	1.9 M	NA	NA	NA	2
Methyl iodide	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Napthalene	94	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	0.0013 U	NA	NA	NA	NA	0.49 M	NA	NA	NA	1.4 M
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	0.0013 U	NA	NA	NA	NA	0.31 U	NA	NA	NA	0.15 U
HYDROCARBONS (mg/kg)																	
NWTPH-HCID																	
Gasoline	--	--	--	80,000	110	20 U	20 U	20 U	20 U	20 U	20 U	20 U	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	25 U	25 U	25 U	57	25 U	25 U	25 U	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	50 U	50 U	50 U	120	50 U	50 U	50 U	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)																	
TPH-Diesel Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	1100	43	6.3 U	6.4 U	1500
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																	
TPH-Gasoline Range	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA	210	5.0 U	5.0 U	NA
PRIORITY POLLUTANT																	
METALS (mg/kg)																	
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	6 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	38	23.1	--	--	--	NA	NA	23.3	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	--	19.1	--	--	--	NA	NA	21.6	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (7421)	--	0	750	--	30	NA	NA	5	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (6010)	130	21.4	--	--	--	NA	NA	24	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	12,000	60.2	--	--	--	NA	NA	58.7	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)	8	--	--	--	--	NA	NA	0.3 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA	0.06 U	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs	Site- Specific Background	Risk-Based Concentrations			LB4(12-13.5) Q650AS 10/25/96	LB4(17-18) Q650AT 10/25/96	LB6(12-13.5) Q650AE 10/23/96	LB6(17-18) Q650AF 10/23/96	LB7(12-13.5) Q650AW 10/25/96	LB7(17-18) Q650AX 10/25/96	LB10(6.5-8.0) Q650AM 10/24/96	LB11 (12.5-14.2) R923C 03/10/97	LB11 (17-17.6) R923D 03/10/97	LB12 (13.2-14.0) R923F 03/10/97	LB12 (15-16) R923G 03/10/97	LB13 (12.5-14) R923I 03/10/97
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation Worker	Occupational	Occupational												
BETX (mg/kg)																	
EPA Method SW8021B																	
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	0.064 U	0.069 U	0.066 U	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.064 U	0.069 U	0.066 U	NA
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	0.064 U	0.069 U	0.066 U	NA
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	0.064 U	0.069 U	0.066 U	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	2.3	0.069 U	0.066 U	NA
DIOXINS AND FURANS (ng/kg)																	
Total TEQ	--	--	--	--	--	2132.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site- Specific Background	SCREENING CRITERIA			CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
			Risk-Based Concentrations			LB13 (15-16.5) R923J 03/10/97	LB14 (12.5-14.0) R923M 03/10/97	LB14 (18-19) R923N 03/10/97	LB15 (7.5-9.0) R923P 03/10/97	LB15 (12.5-14) R923Q 03/10/97	LB15 (16.5-17.3) R923R 03/10/97	LB16 (7.5-9.0) R923BA 03/12/97	LS7 (27.5-29.0) Dup of LB16 (7.5-9.0) R923T 03/12/97		LB16 (21-22.5) R923BB 03/12/97	LB17 (7.5-9.0) R923Z 03/11/97	LB17 (10-11.5) R923AA 03/11/97	LB17 (18-19.5) R923AB 03/11/97
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater													
			Excavation Worker	Occupational	Occupational													
VOLATILES (mg/kg)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromomethane	--	--	7.1	1.7	0.00059	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	--	--	--	--	--	0.051 U	1.4 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0061 U	NA	NA
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	16	--	--	--	--	0.18	1.4 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0082 U	NA	NA
Benzene	0.03	--	9400	48	0.052	0.012 U	0.29 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0012 U	NA	NA
Carbon Disulfide	32	--	--	--	--	0.012 U	0.29 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0012 U	NA	NA
Ethylbenzene	13	--	--	--	--	0.012 U	9.9	NA	NA	NA	NA	NA	NA	NA	NA	0.0012 U	NA	NA
Isopropylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	0.033 M	40	NA	NA	NA	NA	NA	NA	NA	NA	0.0012 U	NA	NA
Methyl iodide	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	0.027 M	19 M	NA	NA	NA	NA	NA	NA	NA	NA	0.0012 U	NA	NA
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	160	0.012 U	0.29 U	NA	NA	NA	NA	NA	NA	NA	NA	0.0012 U	NA	NA
HYDROCARBONS (mg/kg)																		
NWTPH-HCID																		
Gasoline	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)																		
TPH-Diesel Range	--	--	--	--	--	70	4700	24	6.5 U	6.4 U	39	6.3 U	6.2 U	19	6.4 U	6.4 U	38	
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																		
TPH-Gasoline Range	--	--	--	80,000	110	NA	NA	5.0 U	4.9 U	5.1 U	4.9 U	5.1 U	5.0 U	4.9 U	5.0 U	NA	5.0 U	
PRIORITY POLLUTANT																		
METALS (mg/kg)																		
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	38	23.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	NA	NA	NA	17.3	16.9	16.1	16.0	17.9	16.8	
Lead (7421)	--	0	760	--	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	12,000	60.2	--	--	--	NA	NA	NA	NA	NA	NA	48.7	50.2	55.9	49.8	51.5	51.4	
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7431)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site- Specific Background	Risk-Based Concentrations														
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation Worker	Occupational	Occupational	LB13 (15-16.5) R923J 03/10/97	LB14 (12.5-14.0) R923M 03/10/97	LB14 (18-19) R923N 03/10/97	LB15 (7.5-9.0) R923P 03/10/97	LB15 (12.5-14) R923Q 03/10/97	LB15 (15.5-17.3) R923R 03/10/97	LB16 (7.5-9.0) R923BA 03/12/97	LS7 (27.5-29.0) Dup of LB16 (7.5-9.0) R923T 03/12/97	LB16 (21-22.5) R923BB 03/12/97	LB17 (7.5-9.0) R923Z 03/11/97	LB17 (10-11.5) R923AA 03/11/97	LB17 (18-19.5) R923AB 03/11/97
BETX (mg/kg)																	
EPA Method SW8021B																	
Benzene	0.03	--	9400	48	0.052	NA	NA	0.064 U	0.068 U	0.069 U	0.068 U	0.061 U	0.062 U	0.064 U	0.066 U	NA	0.068 U
Ethylbenzene	13	--	--	--	--	NA	NA	0.064 U	0.068 U	0.069 U	0.068 U	0.061 U	0.062 U	0.064 U	0.066 U	NA	0.068 U
Toluene	12	--	--	--	160	NA	NA	0.064 U	0.068 U	0.069 U	0.068 U	0.061 U	0.062 U	0.064 U	0.066 U	NA	0.068 U
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	0.064 U	0.068 U	0.069 U	0.068 U	0.061 U	0.062 U	0.064 U	0.066 U	NA	0.068 U
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	0.064 U	0.068 U	0.069 U	0.068 U	0.061 U	0.062 U	0.064 U	0.066 U	NA	0.068 U
DIOXINS AND FURANS (ng/kg)																	
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF				
SCREENING CRITERIA																						
Sample Identification: Laboratory Identification: Date Collected:		EPA Region 9 PRGs	Site-Specific Background	Risk-Based Concentrations																		
				Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater																
				Excavation Worker	Occupational	Occupational																
						LB18 (7.5-9.0) R923AD 03/11/97	LB18 (18-19.5) R923AE 03/11/97	LB19 (7.5-9.0) R923AG 03/11/97	LB19 (18.0-20.2) R923AH 03/11/97	LB20 (7.5-9.0) R923AK 03/11/97	LB20 (16.3-17.0) R923AL 03/11/97	LB21 (7.5-9.0) R923AN 03/11/97	LB21 (15.4-16.4) R923AO 03/11/97	LB22 (7.5-9.0) R923AQ 03/11/97	LB22 (16.9-17.3) R923AR 03/11/97	LB23 (7.5-9.0) R923AT 03/11/97	LB23 (16.7-17.7) R923AU 03/11/97					
VOLATILES (mg/kg)																						
EPA Method SW8260																						
1,2,4-Trimethylbenzene						--	--	40,000	790	55	NA	NA	NA	NA	NA	NA	NA	NA	NA			
1,2-Dibromobenzene						--	--	40,000	790	0.00069	NA	NA	NA	NA	NA	NA	NA	NA	NA			
1,3,5-Trimethylbenzene						--	--	40,000	--	12	NA	NA	NA	NA	NA	NA	NA	NA				
2-Butanone						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
4-Isopropyltoluene						12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
Acetone						18	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
Benzene						0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA				
Carbon Disulfide						32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
Ethylbenzene						13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
Isopropylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
m,p-Xylene						210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
Methyl iodide						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
Methyl tert-butyl ether						--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA				
Naphthalene						84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA				
n-Butylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
n-Propylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
o-Xylene						210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA				
sec-Butylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
tert-Butylbenzene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
Toluene						12	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA				
HYDROCARBONS (mg/kg)																						
NWTPH-HCID																						
Gasoline						--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA				
Kerosene						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
Diesel						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
Lube Oil						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA				
NWTPH-Dx (mg/kg)																						
TPH-Diesel Range						--	--	--	--	--	6.2 U	10	6.6 U	18	6.2 U	5.1 U	6.7 U	6.5 U	11	7.3	6.6 U	6.5 U
TPH-Kerosene Range						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																						
TPH-Gasoline Range						--	--	--	80,000	110	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.1 U	5.1 U	5.0 U	5.0 U	5.0 U	5.0 U	5.1 U
PRIORITY POLLUTANT																						
METALS (mg/kg)																						
Arsenic (7060)						29	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Chromium (6010)						38	23.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (6010)						--	19.1	--	--	--	16.9	21.5	17.3	18.8	23.4	16.4	16.5	17.8	19.7	19.2	16.8	18.3
Lead (7421)						--	0	750	--	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (6010)						130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)						12,000	60.2	--	--	--	49.7	60.3	53.8	54.9	55.8	52.8	51.3	53.2	54.8	56.7	52.5	55.4
Cadmium (6010)						8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)						--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site- Specific Background	Risk-Based Concentrations			LB18 (7.5-9.0) R923AD 03/11/97	LB18 (14-19.5) R923AE 03/11/97	LB19 (7.5-9.0) R923AG 03/11/97	LB19 (18.0-20.2) R923AH 03/11/97	LB20 (7.5-9.0) R923AK 03/11/97	LB20 (16.3-17.0) R923AL 03/11/97	LB21 (7.5-9.0) R923AN 03/11/97	LB21 (15.4-16.4) R923AO 03/11/97	LB22 (7.5-9.0) R923AQ 03/11/97	LB22 (16.6-17.3) R923AR 03/11/97	LB23 (7.5-9.0) R923AT 03/11/97	LB23 (16.7-17.7) R923AU 03/11/97
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation Worker	Occupational	Occupational												
BETX (mg/kg)																	
EPA Method SW8021B																	
Benzene	0.03	--	9400	48	0.052	0.064 U	0.069 U	0.066 U	0.064 U	0.062 U	0.068 U	0.068 U	0.066 U	0.064 U	0.068 U	0.066 U	0.068 U
Ethylbenzene	13	--	--	--	--	0.064 U	0.069 U	0.066 U	0.064 U	0.062 U	0.068 U	0.068 U	0.066 U	0.064 U	0.068 U	0.066 U	0.068 U
Toluene	12	--	--	--	180	0.064 U	0.069 U	0.066 U	0.064 U	0.062 U	0.068 U	0.068 U	0.066 U	0.064 U	0.068 U	0.066 U	0.068 U
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	0.064 U	0.069 U	0.066 U	0.064 U	0.062 U	0.068 U	0.068 U	0.066 U	0.064 U	0.068 U	0.066 U	0.068 U
o-Xylene	210 (g)	--	--	--	100 (g)	0.064 U	0.069 U	0.066 U	0.064 U	0.062 U	0.068 U	0.068 U	0.066 U	0.064 U	0.068 U	0.066 U	0.068 U
DIOXINS AND FURANS (ng/kg)																	
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

BZTO104(e)023488

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site- Specific Background	Risk-Based Concentrations			LB24 (7.5-9.0) S057B 03/21/97	LB24 (12.5-14.0) S057C 03/21/97	LW1D (7.5-9.0) R950P 03/14/97	LS7 (17.5-19.0) Dup of LW1D (7.5-9.0) R950S 03/14/97	LW1D (16.5-19.0) R950Q 03/14/97	LW1S (15-16.50) R950R 03/14/97	LW1D (30-31.5) S037B 03/17/97	LW2S (12.5-14.0) S037P 03/19/97	LS7 (22.5-24.0) Dup of LW2S (12.5-14.0) S037R 03/18/97	LW2S (16.5-17.0) S037Q 03/18/97	LW3D (7.5-9.0) S037T 03/18/97
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational											
SEMIVOLATILES (mg/kg)																
EPA Method SW8270																
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.67 U	0.89 U	0.48 U	NA
2-Methylnaphthalene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.21 U	0.19 U	0.097 U	NA
Acenaphthene	570	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Anthracene	12,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Butylbenzylphthalate	930	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Carbazole	0.6	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Chrysene	160	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Dibenz(a,i)anthracene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Di-n-Butylphthalate	2300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Di-n-Octylphthalate	10,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Fluoranthene	4300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.14	NA
Fluorene	560	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Hexachloroethane	0.5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.27 U	0.36 U	0.19 U	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	0.77	0.74	0.097 U	NA
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.67 U	0.89 U	0.48 U	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.097 U	NA
Pyrene	4200	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	0.13 U	0.18 U	0.18	NA
SEMIVOLATILES (mg/kg)																
EPA Method SW8270SIM																
Acenaphthene	570	--	--	--	--	NA	NA	0.0084 U	0.0085 U	0.01 U	NA	0.0086 U	NA	NA	NA	0.0085 U
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	0.0084 U	0.0085 U	0.01 U	NA	0.0086 U	NA	NA	NA	0.0085 U
Anthracene	12,000	--	--	--	--	NA	NA	0.0084 U	0.0085 U	0.01 U	NA	0.0086 U	NA	NA	NA	0.0085 U
Benzo(a)anthracene	2	--	590	--	--	NA	NA	0.0084 U	0.0085 U	0.022	NA	0.0086 U	NA	NA	NA	0.0085 U
Benzo(a)pyrene	8	--	59	--	--	NA	NA	0.0084 U	0.0085 U	0.02	NA	0.0086 U	NA	NA	NA	0.0085 U
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	0.0084 U	0.0085 U	0.015	NA	0.0086 U	NA	NA	NA	0.0085 U
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	0.0084 U	0.0085 U	0.01 U	NA	0.0086 U	NA	NA	NA	0.0085 U
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	0.0084 U	0.0085 U	0.02	NA	0.0086 U	NA	NA	NA	0.0085 U
Chrysene	160	--	59,000	--	--	NA	NA	0.0084 U	0.0085 U	0.027	NA	0.0086 U	NA	NA	NA	0.0085 U
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	0.0084 U	0.0085 U	0.01 U	NA	0.0086 U	NA	NA	NA	0.0085 U
Fluoranthene	4300	--	--	--	--	NA	NA	0.0084 U	0.0085 U	0.041	NA	0.0086 U	NA	NA	NA	0.0085 U
Fluorene	560	--	--	--	--	NA	NA	0.0084 U	0.0085 U	0.01 U	NA	0.0086 U	NA	NA	NA	0.0085 U
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	0.0084 U	0.0085 U	0.01 U	NA	0.0086 U	NA	NA	NA	0.0085 U
Naphthalene	84	--	20,000	--	15	NA	NA	0.0084 U	0.0085 U	0.01 U	NA	0.0086 U	NA	NA	NA	0.0085 U
Phenanthrene	84 (b)	--	--	--	--	NA	NA	0.0084 U	0.0085 U	0.023	NA	0.0086 U	NA	NA	NA	0.0085 U
Pyrene	4200	--	--	--	--	NA	NA	0.0084 U	0.0085 U	0.041	NA	0.0086 U	NA	NA	NA	0.0085 U
CHLORINATED PHENOLS (mg/kg)																
Method 8040/8270SIM																
Pentachlorophenol	0.03	--	--	--	--	NA	NA	0.0079 U	0.008 U	0.0095 U	NA	0.0081 U	110	82	12	0.083

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site- Specific Background	SCREENING CRITERIA			CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
			Risk-Based Concentrations													
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational	LB24 (7.5-9.0) S057B 03/21/97	LB24 (12.5-14.0) S057C 03/21/97	LW1D (7.5-9.0) R950P 03/14/97	LS7 (17.5-19.0) Dup of LW1D (7.5-9.0) R950S 03/14/97	LW1D (16.5-19.0) R950Q 03/14/97	LW1S (15-16.50) R950R 03/14/97	LW1D (30-31.5) S037B 03/17/97	LW2S (12.5-14.0) S037P 03/18/97	LS7 (22.5-24.0) Dup of LW2S (12.5-14.0) S037R 03/18/97	LW2S (16.5-17.0) S037Q 03/18/97	LW3D (7.5-9.0) S037T 03/18/97
BETX (mg/kg)																
EPA Method SW8021B																
Benzene	0.03	--	9400	48	0.052	NA	NA	0.066 U	0.066 U	0.066 U	NA	0.066 U	NA	NA	0.064 U	0.066 U
Ethylbenzene	13	--	--	--	--	NA	NA	0.066 U	0.066 U	0.066 U	NA	0.066 U	NA	NA	0.064 U	0.066 U
Toluene	12	--	--	--	180	NA	NA	0.066 U	0.066 U	0.066 U	NA	0.066 U	NA	NA	0.064 U	0.066 U
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	0.066 U	0.066 U	0.066 U	NA	0.066 U	NA	NA	0.064 U	0.066 U
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	0.066 U	0.066 U	0.066 U	NA	0.066 U	NA	NA	0.064 U	0.066 U
DIOXINS AND FURANS (ng/kg)																
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	5110.9	NA	0.0706	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site-Specific Background	Risk-Based Concentrations			LW3D (12.5-14.0)	LW3D (16.0-17.2)	LW3D (24.0-25.5)	LW3D (36.5-39.0)	LW4DR (14.5-15)	LW5S (10-11.5)	LW5S (16.5-17.2)	PZ-1 (13-16)	LW11S (15-19)	RW1 (13-17)	OX1S (15-16)
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater	S037U 03/18/97	S037V 03/18/97	S037Z 03/19/97	S037AA 03/19/97	0411117-01 11/18/2004	R923V 03/12/97	R923X 03/12/97	0210067-06A 10/08/02	0210067-02A 10/08/02	0210067-07A 10/08/02	EM10B 06/14/02
			Excavation Worker	Occupational	Occupational											
SEMIVOLATILES (mg/kg)																
EPA Method SW8270																
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	0.48 U	0.44 U	NA	0.43 U	0.43 U	NA	NA	NA	NA
2-Methylnaphthalene	94 (b)	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.095 U	0.086 U	NA	NA	NA	NA
Acenaphthene	570	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.085 U	0.086 U	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.085 U	0.086 U	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.17	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA	0.096 U	0.088 U	NA	0.15	0.39	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA	0.096 U	0.088 U	NA	0.22	0.5	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.2	0.29	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.33	0.49	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	0.096 U	0.088 U	NA	0.17	0.38	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Butylbenzylphthalate	930	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Carbazole	0.6	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	NA	NA	0.096 U	0.088 U	NA	0.23	0.5	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	0.096 U	0.088 U	NA	0.085 U	0.089	NA	NA	NA	NA
Dibenzofuran	--	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Di-n-Butylphthalate	2300	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Di-n-Octylphthalate	10,000	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.32	0.97	NA	NA	NA	NA
Fluorene	560	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Hexachloroethane	0.5	--	--	--	--	NA	NA	0.19 U	0.18 U	NA	0.17 U	0.17 U	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	0.096 U	0.088 U	NA	0.21	0.37	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	0.096 U	0.088 U	NA	0.086 U	0.086 U	NA	NA	NA	NA
Penta-Chlorophenol	0.03	--	--	--	--	NA	NA	0.48 U	0.44 U	0.383 U	0.43 U	0.43 U	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.13	0.72	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	NA	NA	0.096 U	0.088 U	NA	0.57	1.3	NA	NA	NA	NA
SEMIVOLATILES (mg/kg)																
EPA Method SW8270SIM																
Acenaphthene	570	--	--	--	--	0.0088 U	0.009 U	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	0.0088 U	0.009 U	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	0.0088 U	0.017	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	0.0088 U	0.043	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	0.0088 U	0.046	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	0.0088 U	0.019	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	0.0088 U	0.028	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	5900	--	--	0.0088 U	0.029	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	0.0088 U	0.04	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	0.0088 U	0.032	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	0.0088 U	0.073	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Fluorene	560	--	--	--	--	0.0088 U	0.069	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	0.0088 U	0.03	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	0.0088 U	0.009 U	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	0.0088 U	0.029	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	0.0088 U	0.073	0.0097 U	0.0089 U	NA	NA	NA	NA	NA	NA	NA
CHLORINATED PHENOLS (mg/kg)																
Method 8040/8270SIM																
Pentachlorophenol	0.03	--	--	--	--	0.0083 U	0.0084 U	0.0091 U	0.0084 U	NA	0.0077 U	0.013	1.09	16.7	0.933 U	6

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site- Specific Background	SCREENING CRITERIA			CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
			Risk-Based Concentrations			LW3D (12.5-14.0) S037U 03/18/97	LW3D (16.0-17.2) S037V 03/18/97	LW3D (24.0-25.5) S037Z 03/19/97	LW3D (36.5-39.0) S037AA 03/19/97	LW4DR (14.5-15) 0411117-01 11/18/2004	LW5S (10-11.5) R923V 03/12/97	LW5S (16.5-17.2) R923X 03/12/97	PZ-1 (13-16) 0210067-06A 10/08/02	LW11S (15-19) 0210067-02A 10/08/02	RW1 (13-17) 0210067-07A 10/08/02	OX1S (15-16) EM10B 06/14/02
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational											
VOLATILES (mg/kg)																
EPA Method SW8260																
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromethane	--	--	7.1	1.7	0.000059	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	12 (a)	--	--	--	--	0.0068 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	16	--	--	--	--	0.02	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.03	--	9400	48	0.052	0.0014 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	32	--	--	--	--	0.0014 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	0.0014 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	0.0014 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl iodide	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	64	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	0.0014 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	0.0055 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HYDROCARBONS (mg/kg)																
NWTPH-HCID																
Gasoline	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)																
TPH-Diesel Range	--	--	--	--	--	6.6 U	6.7 U	49	6.7 U	NA	8.3	17	NA	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																
TPH-Gasoline Range	--	--	--	80,000	110	NA	5.0 U	5.1 U	NA	NA	5.0 U	5.0 U	NA	NA	NA	NA
PRIORITY POLLUTANT																
METALS (mg/kg)																
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	38	23.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	--	19.1	--	--	--	15.8	16.9	33.5	14.7	NA	18.8	18.1	NA	NA	NA	NA
Lead (7421)	--	9	750	--	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	12,000	60.2	--	--	--	52.0	52.0	71.0	49.3	NA	55.9	54.9	NA	NA	NA	NA
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7473)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA					CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
	EPA Region 9 PRGs	Site- Specific Background	Risk-Based Concentrations			LW3D (12.5-14.0) S037U 03/18/97	LW3D (16.0-17.2) S037V 03/18/97	LW3D (24.0-25.5) S037Z 03/19/97	LW3D (36.5-39.0) S037AA 03/19/97	LW4DR (14.5-15) 0411117-01 11/18/2004	LW5S (10-11.5) R923V 03/12/97	LW5S (16.5-17.2) R923X 03/12/97	PZ-1 (13-16) 0210067-06A 10/08/02	LW11S (15-19) 0210067-02A 10/08/02	RW1 (13-17) 0210067-07A 10/08/02	OX1S (15-16) EM10B 08/14/02
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater											
			Excavation Worker	Occupational	Occupational											
BETX (mg/kg)																
EPA Method SW8021B																
Benzene	0.03	--	9400	48	0.052	NA	0.071 U	0.074 U	0.064 U	NA	0.068 U	0.074 U	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	0.071 U	0.074 U	0.064 U	NA	0.068 U	0.074 U	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	0.071 U	0.074 U	0.064 U	NA	0.068 U	0.074 U	NA	NA	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	0.071 U	0.074 U	0.064 U	NA	0.068 U	0.074 U	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	0.071 U	0.074 U	0.064 U	NA	0.068 U	0.074 U	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site-Specific Background	Risk-Based Concentrations			OX1S (14-17) 0210067-05A 10/09/02	OX2S (15-16) EM10A 08/14/02	OX2S (14-17) 0210067-04A 10/08/02	OX3S (15-16) EM10C 06/14/02	OX3S (14-18) 0210067-03A 10/08/02	OX4S (15.5-16.5) EM10D 06/17/02	OX4S (14-18) 0210067-01A 10/08/02	OX5S (12-13) 0309126-05 09/17/03	OX6S (15-16) 0309126-04 09/17/03	OX7S (12-13) 0309126-08 09/18/03	OX8D (13.5-14.5) 0309126-02 09/16/03	OX8D (22-23) 0309126-03 09/16/03
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation Worker	Occupational	Occupational												
SEMIVOLATILES (mg/kg) EPA Method SW8270						NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	570	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Butylparaphthalate	930	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbazole	0.6	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	2300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Di-n-Octylphthalate	10,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	560	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachloroethane	0.5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pentachlorophenol	0.03	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
SEMIVOLATILES (mg/kg) EPA Method SW8270SIM						NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	570	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	12,000	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	2	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	8	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	49	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	160	--	59,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	4300	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	560	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	84 (b)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	4200	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
CHLORINATED PHENOLS (mg/kg) Method 8040/8270SIM																	
Pentachlorophenol	0.03	--	--	--	--	2.71	9.9	37.7	11	3.22	1.3	0.415	0.333 U	0.576	0.333 U	0.333 U	12.9

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA					CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
	EPA Region 9 PRGs	Site- Specific Background	Risk-Based Concentrations			OX1S (14-17) 0210067-05A 10/08/02	OX2S (15-16) EM10A 06/14/02	OX2S (14-17) 0210067-04A 10/08/02	OX3S (15-16) EM10C 06/14/02	OX3S (14-16) 0210067-03A 10/08/02	OX4S (15.5-16.5) EM10D 06/17/02	OX4S (14-18) 0210067-01A 10/08/02	OX5S (12-13) 0309126-05 09/17/03	OX6S (15-16) 0309126-04 09/17/03	OX7S (12-13) 0309126-08 09/18/03	OX8D (13.5-14.5) 0309126-02 09/16/03	OX8D (22-23) 0309126-03 09/16/03
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation Worker	Occupational	Occupational												
VOLATILES (mg/kg)																	
EPA Method SW8260																	
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromobenzene	--	--	75	1.7	0.00059	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	15	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon Disulfide	32	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Isopropylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl Isobutyl	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	84	--	20,000	--	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
HYDROCARBONS (mg/kg)																	
NWTPH-HCID																	
Gasoline	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Kerosene	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lube Oil	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx (mg/kg)																	
TPH-Diesel Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Kerosene Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-G (mg/kg)																	
TPH-Gasoline Range	--	--	--	80,000	110	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT																	
METALS (mg/kg)																	
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chromium (6010)	38	23.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper (6010)	--	19.1	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lead (7421)	--	0	750	--	30	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel (6010)	130	21.4	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc (6010)	12,000	80.2	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cadmium (6010)	8	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site- Specific Background	Risk-Based Concentrations														
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater												
			Excavation Worker	Occupational	Occupational	OX1S (14-17) 0210067-05A 10/08/02	OX2S (15-16) EM10A 06/14/02	OX2S (14-17) 0210067-04A 10/08/02	OX3S (15-16) EM10C 06/14/02	OX3S (14-18) 0210067-03A 10/08/02	OX4S (15.5-16.5) EM10D 06/17/02	OX4S (14-18) 0210067-01A 10/08/02	OX5S (12-13) 0309126-05 09/17/03	OX6S (15-16) 0309126-04 09/17/03	OX7S (12-13) 0309126-08 09/18/03	OX8D (13.5-14.5) 0309126-02 09/16/03	OX8D (22-23) 0309126-03 09/16/03
BETX (mg/kg)																	
EPA Method SW8021B																	
Benzene	0.03	--	9400	48	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	12	--	--	--	180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINS AND FURANS (ng/kg)																	
Total TEQ	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA							CF	CF
Sample Identification: Laboratory Identification: Date Collected:	EPA Region 9 PRGs DAF=20	Site-Specific Background	Risk-Based Concentrations			OX8S (13.5-14.5) 0309126-01 09/16/03	OX9S (12.5-13) 0407078-01 07/14/04	
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater			
			Excavation Worker	Occupational	Occupational			
SEMIVOLATILES (mg/kg)								
EPA Method SW8270								
2,6-Dinitrotoluene	0.0007	--	--	--	--	NA	NA	
2-Methylnaphthalene	84 (b)	--	--	--	--	NA	NA	
Acenaphthene	570	--	--	--	--	NA	NA	
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	
Anthracene	12,000	--	--	--	--	NA	NA	
Benzo(a)anthracene	2	--	590	--	--	NA	NA	
Benzo(a)pyrene	8	--	59	--	--	NA	NA	
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	
bis(2-Ethylhexyl)phthalate	3600 (c)	--	--	--	--	NA	NA	
Butylbenzylphthalate	930	--	--	--	--	NA	NA	
Carbazole	0.6	--	--	--	--	NA	NA	
Chrysene	160	--	59,000	--	--	NA	NA	
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	
Dibenzofuran	--	--	--	--	--	NA	NA	
Diethylphthalate	3600 (c)	--	--	--	--	NA	NA	
Dimethylphthalate	3600 (c)	--	--	--	--	NA	NA	
Di-n-Butylphthalate	2300	--	--	--	--	NA	NA	
Di-n-Octyl phthalate	10,000	--	--	--	--	NA	NA	
Fluoranthene	4300	--	--	--	--	NA	NA	
Fluorene	560	--	--	--	--	NA	NA	
Hexachloroethane	0.5	--	--	--	--	NA	NA	
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	
Naphthalene	84	--	20,000	--	15	NA	NA	
Pentachlorophenol	0.03	--	--	--	--	NA	0.030 U	
Phenanthrene	84 (b)	--	--	--	--	NA	NA	
Pyrene	4200	--	--	--	--	NA	NA	
SEMIVOLATILES (mg/kg)								
EPA Method SW8270SIM								
Acenaphthene	570	--	--	--	--	NA	NA	
Acenaphthylene	84 (b)	--	--	--	--	NA	NA	
Anthracene	12,000	--	--	--	--	NA	NA	
Benzo(a)anthracene	2	--	590	--	--	NA	NA	
Benzo(a)pyrene	8	--	59	--	--	NA	NA	
Benzo(b)fluoranthene	5	--	--	--	--	NA	NA	
Benzo(g,h,i)perylene	84 (b)	--	--	--	--	NA	NA	
Benzo(k)fluoranthene	49	--	5900	--	--	NA	NA	
Chrysene	160	--	59,000	--	--	NA	NA	
Dibenz(a,h)anthracene	2	--	59	--	--	NA	NA	
Fluoranthene	4300	--	--	--	--	NA	NA	
Fluorene	560	--	--	--	--	NA	NA	
Indeno(1,2,3-cd)pyrene	14	--	590	--	--	NA	NA	
Naphthalene	84	--	20,000	--	15	NA	NA	
Phenanthrene	84 (b)	--	--	--	--	NA	NA	
Pyrene	4200	--	--	--	--	NA	NA	
CHLORINATED PHENOLS (mg/kg)								
Method 8040/8270SIM								
Pentachlorophenol	0.03	--	--	--	--	3.22	NA	

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TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

SCREENING CRITERIA						CF	CF
Sample Identification: Laboratory Identification: Date Collected	EPA Region 9 PRGs DAF=20	Site-Specific Background	Risk-Based Concentrations			OX8S (13.5-14.5) 0309126-01 09/16/03	OX9S (12.5-13) 0407078-01 07/14/04
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater		
			Excavation Worker	Occupational	Occupational		
VOLATILES (mg/kg)							
EPA Method SW8260							
1,2,4-Trimethylbenzene	--	--	40,000	790	55	NA	NA
1,2-Dibromochloroethane	--	--	7.9	1.7	0.000059	NA	NA
1,3,5-Trimethylbenzene	--	--	40,000	--	12	NA	NA
2-Butanone	--	--	--	--	--	NA	NA
4-Isopropyltoluene	12 (a)	--	--	--	--	NA	NA
Acetone	16	--	--	--	--	NA	NA
Benzene	0.03	--	9400	48	0.052	NA	NA
Carbon Disulfide	32	--	--	--	--	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA
Isopropylbenzene	--	--	--	--	--	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA
Methyl iodide	--	--	--	--	--	NA	NA
Methyl tert-butyl ether	--	--	--	720	0.30	NA	NA
Naphthalene	64	--	20,000	--	15	NA	NA
n-Butylbenzene	--	--	--	--	--	NA	NA
n-Propylbenzene	--	--	--	--	--	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA
sec-Butylbenzene	--	--	--	--	--	NA	NA
tert-Butylbenzene	--	--	--	--	--	NA	NA
Toluene	12	--	--	--	180	NA	NA
HYDROCARBONS (mg/kg)							
NWTPH-HCID							
Gasoline	--	--	--	80,000	110	NA	NA
Kerosene	--	--	--	--	--	NA	NA
Diesel	--	--	--	--	--	NA	NA
Lube Oil	--	--	--	--	--	NA	NA
NWTPH-Dx (mg/kg)							
TPH-Diesel Range	--	--	--	--	--	NA	NA
TPH-Kerosene Range	--	--	--	--	--	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	NA	NA
NWTPH-G (mg/kg)							
TPH-Gasoline Range	--	--	--	80,000	110	NA	NA
PRIORITY POLLUTANT							
METALS (mg/kg)							
Arsenic (7060)	29	5 (j)	--	--	--	NA	NA
Chromium (6010)	38	23.1	--	--	--	NA	NA
Copper (6010)	--	19.1	--	--	--	NA	NA
Lead (7421)	--	9	750	--	30	NA	NA
Nickel (6010)	130	21.4	--	--	--	NA	NA
Zinc (6010)	12,000	60.2	--	--	--	NA	NA
Cadmium (6010)	8	--	--	--	--	NA	NA
Mercury (7471)	--	--	--	--	--	NA	NA

TABLE C-6b
SUMMARY OF DETECTED ANALYTICAL RESULTS IN SOIL:
PHASE II STUDY AREA (>3 FT)

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA					CF	CF
	EPA Region 9 PRGs	Site- Specific Background	Risk-Based Concentrations			OX9S (13.5-14.5) 0309126-01 09/16/03	OX9S (12.5-13) 0407078-01 07/14/04
			Soil Ingestion, Dermal Contact, and Inhalation	Volatilization to Outdoor Air	Leaching to Groundwater		
			Excavation Worker	Occupational	Occupational		
BETX (mg/kg)							
EPA Method SW8021B							
Benzene	0.03	--	9400	49	0.052	NA	NA
Ethylbenzene	13	--	--	--	--	NA	NA
Toluene	12	--	--	--	180	NA	NA
Xylenes, Total	210	--	--	--	100	NA	NA
m,p-Xylene	210 (g)	--	--	--	--	NA	NA
o-Xylene	210 (g)	--	--	--	100 (g)	NA	NA
DIOXINS AND FURANS (ng/kg)							
Total TEQ	--	--	--	--	--	NA	NA

BZTO104(e)023500

**TABLE C-7
SUMMARY OF DETECTED ANALYTICAL RESULTS
SOIL FOOTNOTES**

Page 1 of 1

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.

UJ = Data validation flag indicating the analyte was not detected in the sample; the reported sample detection limit is an estimate.

J = Data validation flag indicating the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

NA = Not analyzed.

Bold indicates value is a detected constituent.

Box indicates value exceeds one or more screening criteria.

(a) Risk-based concentration not available due to lack of toxicity data; therefore, the risk-based concentration for the structurally similar compound and mode of toxic action (toluene) was used for the comparison.

(b) Risk-based concentration not available due to lack of toxicity data; therefore, the risk-based concentration for the structurally similar compound and mode of toxic action (naphthalene) was used for the comparison.

(c) Values calculated using equation 10 in EPA's Soil Screening Guidance (EPA 1996).

(d) Risk-based concentration not available due to lack of toxicity data; therefore, the risk-based concentration for the structurally similar compound and mode of toxic action (bis(2-Ethylhexyl)phthalate) was used for comparison.

(e) Risk-based concentration not available due to lack of toxicity data; therefore, the risk-based concentration for the structurally similar compound and mode of toxic action (Di-n-butylphthalate) was used for the comparison.

(f) Risk-based concentration not available due to lack of toxicity data; therefore, the risk-based concentration for the structurally similar compound and mode of toxic action (benzene) was used for the comparison.

(g) Value is for total xylenes.

(h) Criteria less than site-specific background.

(i) SLVs shown are for Arsenic III.

(j) Site-specific background concentration was determined for arsenic during the COPC screening process of Phase I and II soil. However, since that time, additional information obtained from DEQ indicates that arsenic background in the Portland area are typically about 5 mg/kg (DEQ 1999).

(k) SLVs shown are for Chromium III.

Detected Constituents – Groundwater Data Summary Tables

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

												MTF	MTF	MTF	MTF	MTF	MTF												
SCREENING CRITERIA																													
Oregon SLVs - Surface Water				Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	GW2-1	GW3-2	GW28-1	GW9-1	GW9-2	GW9-3											
Sample Identification: Laboratory Identification: Date Collected				Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0108228-1	0108228-03	Dup of GW3-2	0110174-01	0110174-02	0110174-03											
													8/30/2001	8/30/2001	8/30/2001	10/24/2001	10/24/2001	10/24/2001											
NWTPH-Dx																													
TPH-Diesel Range												--	--	--	--	--	--	--	6.35 J	NA	NA	19.6 J	2.93 J	2.81 J					
TPH-Motor Oil Range																			0.548 J	NA	NA	0.500 U	0.500 U	0.500 U					
NWTPH-G																													
TPH-Gasoline Range												--	--	--	--	--	--	12	--	3.46	NA	NA	NA	NA	4.44				
PRIORITY POLLUTANT																													
METALS (mg/L)																													
Arsenic (7060)												0.15 (i) (*)	18 (j)	6	0.34	0.15	0.00014 (g)(*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.0329	0.0148	0.0163	0.0211	0.0196	0.0316
Chromium (6010)												0.011 (k)	--	28 (k)	0.29 (i)	0.065 (i)	3433	0.57	0.974	--	--	0.005	0.00500 U	0.00500 U	0.00500 U	0.00770	0.00500 U	0.00500 U	
Copper (6010)												0.009	341	53	0.05 (i)	0.011 (i)	--	0.013	0.009	--	--	0.004	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	
Lead (7421)												0.0025 (*)	28	323	0.043 (i)	0.0007 (i)(*)	--	0.065	0.0025 (*)	--	--	0.02	0.00338	0.00200 U	0.00200 U	0.00236	0.00200 U	0.00289	
Nickel (6010)												0.052	562	38	0.33 (i)	0.052 (i)	4.6	0.47	0.052	4.6	--	--	0.01	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	
Zinc (6010)												0.120	105	1230	0.1 (i)	0.1 (i)	26	0.12	0.12	26	--	--	0.015	0.0100 U	0.0100 U	0.0100 U	0.0209	0.0100 U	0.0100 U
BETX (µg/L)																													
EPA Method SW8021B																													
Benzene												130	--	200000	5300 (a)	--	51 (g)		51	1700	13000		NA	NA	NA	NA	NA	NA	
Ethylbenzene												7.3	--	200000 (f)	32000 (a)	--	2100		28,000	110,000			NA	NA	NA	NA	NA	NA	
Toluene												9.8	--	104000	17500 (a)	--	15,000		200,000	78,000			NA	NA	NA	NA	NA	NA	
Xylenes: Total												13 (h)	--	8000 (h)						122,000			NA	NA	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																													
EPA Method SW8290																													
Total TEQ												--	--	--	--	--	5.1E-06	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

											MTF	MTF	MTF	MTF	MTF	MTF	MTF				
SCREENING CRITERIA																					
Sample Identification: Laboratory Identification: Date Collected:			Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	GW9-4	GW12-1	GW13-1	GW13-2	GW14-1	GW16-1	LW4S
			Fresh Aquatic	Fresh Birds	Fresh Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0110174-04 10/24/2001	0108228-04 8/30/2001	0108229-08 8/30/2001	0108228-05 8/30/2001	0108228-05 8/30/2001	0108228-07 8/30/2001	0108228-07 8/30/2001
NWTPH-Dx			--	--	--	--	--	--	--	--	--	--	--	NA (**)	6.67 J	1.42 J	2.11 J	NA	2.37 J	0.26	
TPH-Diesel Range			--	--	--	--	--	--	--	--	--	--	--	NA (**)	0.566 J	0.500 U	0.500 U	NA	0.500 U	0.5 U	
TPH-Motor Oil Range			--	--	--	--	--	--	--	--	--	--	--	NA (**)	0.566 J	0.500 U	0.500 U	NA	0.500 U	0.5 U	
NWTPH-G			--	--	--	--	--	--	--	--	--	--	--	NA	NA	1.88	1.02	1.57	2.92	NA	
TPH-Gasoline Range			--	--	--	--	--	--	--	12	--	--	--	NA	NA	1.88	1.02	1.57	2.92	NA	
PRIORITY POLLUTANT																					
METALS (mg/L)																					
Arsenic (7060)			0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g/l*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.0381	0.0393	0.0198	0.0215	0.00755	0.0236	0.001
Chromium (6010)			0.011 (k)	25 (k)	3433	0.29 (l)	0.065 (l)	--	0.57	0.024	--	--	--	0.300	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.006
Copper (6010)			0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	--	0.004	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.006
Lead (7421)			0.0025 (*)	28	923	0.043 (l)	0.0007 (l) (*)	--	0.065	0.0025 (*)	--	--	--	0.02	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.00200 U	0.001 U
Nickel (6010)			0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	--	0.01	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.00500 U	0.01 U
Zinc (6010)			0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	--	0.015	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.0100 U	0.009
BETX (µg/L)																					
EPA Method SW8021B																					
Benzene			130	--	200000	5300 (a)	--	51 (g)	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene			7.3	--	200000 (b)	32000 (a)	--	2100	--	25000	110000	--	--	NA	NA	NA	NA	NA	NA	NA	
Toluene			9.8	--	104000	17500 (a)	--	15000	--	200,000	78,000	--	--	NA	NA	NA	NA	NA	NA	NA	
Xylenes, Total			13 (h)	--	8000 (h)	--	--	--	--	--	22,000	--	--	NA	NA	NA	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																					
EPA Method SW8290																					
Total TEQ			--	--	--	--	--	5.1E-06	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

											MTF	MTF	MTF	MTF	MTF	MTF	MTF	MTF		
SCREENING CRITERIA																				
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW4S	LW4S	LW4S	X Dup of LW4S	LW8S	LW8S	LW8S	X Dup of LW8S
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0402113-07 2/23/2004	0408035-08 8/5/2004	0411066-12 11/11/2004	0411066-01 11/11/2004	FY64L 10/21/2003	0402113-09 2/23/2004	LW8S 0406059-07 6/9/2004	LW8S 0406059-07 6/9/2004
NWTPH-Dx TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	--	--	0.244 U	0.256 U	0.244 U	0.248 U	3.5	11.7	8.52	8.36
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	--	0.487 U	0.511 U	0.488 U	0.486 U	0.5 U	0.504 U	0.496 U	0.506 U
NWTPH-G TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	--	--	NA	NA	NA	NA	4.6	9.23	8.62	8.37
PRIORITY POLLUTANT																				
METALS (mg/L)																				
Arsenic (7090)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.001 U	0.001 U	0.001 U	0.001 U	0.021	0.025	0.0225	0.0228
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	0.433	0.57	0.074	--	--	--	0.005	0.007 U	0.005 U	0.005 U	0.005 U	0.007	0.0064	0.0144	0.0161
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	--	0.004	0.01 U	0.01 U	0.01 U	0.01 U	0.007	0.01 U	0.01 U	0.01 U
Lead (7421)	0.0025 (*)	28	323	0.043 (l)	0.0007 (l) (*)	--	0.065	0.0025 (*)	--	--	--	0.02	0.0001 U	0.0001 U	0.00018	0.00067	0.002	0.000124	0.0001	0.0001
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	--	0.01	0.005 U	0.005 U	0.0121 U	0.0128 U	0.02	0.005 U	0.005 U	0.005 U
Zinc (6030)	0.120	106	1290	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	--	0.015	0.01 U	0.01 U	0.01 U	0.01 U	0.027	0.01 U	0.01 U	0.01 U
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (f)	32000 (a)	--	2100	--	--	28,000	110,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (b)	--	--	--	--	--	--	22,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

											MTF	MTF	MTF	MTF	MTF	MTF	MTF	MTF														
											SCREENING CRITERIA																					
Sample Identification: Laboratory Identification: Date Collected:			Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background																		
			Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		LW8S 0408036-02 8/5/2004	LW8S 0411051-09 11/8/2004	LW13S FY82E 10/23/2003	LW13S 0402113-06 2/23/2004	LW13S 0408036-07 8/5/2004	LW13S 0411066-16 11/11/2004	LW19S FZ04C 10/28/2003	LW19S 0402115-04 2/24/2004										
NWTPH-Dx																																
TPH-Diesel Range											--	--	--	--	--	--	--	--	--		5.15	4.11	NA	NA	0.244 U	4.4	7.53					
TPH-Motor Oil Range											--	--	--	--	--	--	--	--	--	--		0.488 U	0.484 U	NA	NA	0.489 U	0.5 U	1.07				
NWTPH-G																																
TPH-Gasoline Range											--	--	--	--	--	--	--	--	--	12	--		4.44	4.37	NA	NA	NA	NA	1.1	1.33		
PRIORITY POLLUTANT																																
METALS (mg/L)																																
Arsenic (7060)											0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.0223	0.0239	NA	NA	NA	0.001 U	0.046	0.0402		
Chromium (6010)											0.011 (k)	--	26 (k)	0.39 (j)	0.085 (j)	0.433	0.57	0.074	--	--	0.005	0.005 U	0.005 U	NA	NA	NA	0.0235	0.005 U	0.0095			
Copper (6010)											0.009	341	53	0.05 (j)	0.011 (j)	--	0.013	0.009	--	--	0.004	0.01 U	0.01 U	NA	NA	NA	0.0609	0.002 U	0.01 U			
Lead (6421)											0.0025 (*)	28	323	0.043 (j)	0.0007 (j) (*)	--	0.009	0.0026 (*)	--	--	0.02	0.0001	0.00013 U	NA	NA	NA	0.00025	0.001	0.000468			
Nickel (6010)											0.052	562	38	0.33 (j)	0.052 (j)	4.6	0.47	0.052	4.6	--	--	0.01	0.005 U	0.005 U	NA	NA	NA	0.0853	0.01 U	0.005 U		
Zinc (6010)											0.120	105	1230	0.1 (j)	0.1 (j)	26	0.12	0.12	26	--	--	0.012	0.01 U	0.01 U	NA	NA	NA	0.01 U	0.026 U	0.01 U		
BETX (µg/L)																																
EPA Method SW8021B																																
Benzene											130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000		NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene											7.3	--	200000 (f)	32000 (a)	--	2100	--	--	25000	110,000	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	
Toluene											9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	
Xylenes, Total											13 (h)	--	8000 (h)	--	--	--	--	--	--	22,000	--		NA	NA	NA	NA	NA	NA	NA	NA		
DIOXIN/FURANS (ng/L)																																
EPA Method SW8290																																
Total TEQ											--	--	--	--	--	5.1E-06	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

BZTO104(e)023510

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF		
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW19S	LW19S	LW19S	LW20S	LW20S
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		040605-12 6/8/2004	040805-08 8/9/2004	041105-01 11/10/2004	FZ04M 10/28/2003	0402115-02 2/24/2004
NWTPH-Dx TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	7.12	6.15	5.32	5.4	6.77
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.816 U	0.8 U	1.66	0.8 U	1.06
NWTPH-G TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	1.28	0.785	1.3	0.95	1.4
PRIORITY POLLUTANT																	
METALS (mg/L)																	
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.0393	0.0406	0.0406	0.04	0.0204
Chromium (6010)	0.011 (k)	--	25 (v)	0.28 (i)	0.085 (i)	3433	0.57	0.074	--	--	---	0.006	0.005 U	0.0158	0.0149	0.002 U	0.013
Copper (6010)	0.009	341	53	0.06 (i)	0.011 (i)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.159	0.01 U	0.002 U	0.01 U
Lead (7461)	0.0026 (*)	28	353	0.043 (i)	0.0007 (i) (*)	--	0.065	0.0026 (*)	--	--	---	0.02	0.0001	0.000177	0.00045	0.001 U	0.000486 U
Nickel (6010)	0.052	562	38	0.33 (i)	0.052 (i)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U
Zinc (6010)	0.120	105	1230	0.1 (i)	0.1 (i)	26	0.12	0.12	26	--	---	0.015	0.01 U	0.01 U	0.01 U	0.01	0.01 U
BETX (µg/L)																	
EPA Method SW8021B																	
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000		NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (f)	36000 (a)	--	2100	--	--	23,000	110,000	--		NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	75,000	---		NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (b)	--	--	--	--	--	--	22,000	--		NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																	
EPA Method SW8290																	
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

												MTF	MTF	MTF	MTF	MTF	MTF	MTF	
SCREENING CRITERIA																			
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	X Dup of LW20S 0402115-01 2/24/2004	LW20S 0406050-11 6/8/2004	LW20S 0408056-09 8/9/2004	X Dup of LW20S 0408056-01 8/9/2004	LW20S 0411059-02 11/10/2004	LW21S FZ04Q 10/28/2003	LW27S FZ04R 10/28/2003
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		Dup of LW20S 0402115-01 2/24/2004	LW20S 0406050-11 6/8/2004	LW20S 0408056-09 8/9/2004	X Dup of LW20S 0408056-01 8/9/2004	LW20S 0411059-02 11/10/2004	LW21S FZ04Q 10/28/2003	LW27S FZ04R 10/28/2003
NWTPH-Dx	--	--	--	--	--	--	--	--	--	--	--	--	6.29	10.7	9.21	8.43	6.45	4.3	4.4
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	--	--	0.998	0.498 U	0.511 U	0.528 U	2.37	0.8 U	0.8 U
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
NWTPH-G	--	--	--	--	--	--	--	--	--	12	--	--	1.23	0.981	0.783	0.676	1.21	24	1.6
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
PRIORITY POLLUTANT																			
METALS (mg/L)																			
Arsenic (7060)	0.15 (l) (*)	18 (l)	6	0.34	0.15	0.00014 (g/l) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.0188	0.0293	0.0317	0.031	0.0336	0.025	0.038
Chromium (6010)	0.011 (k)	25 (s)	25 (s)	0.29 (l)	0.065 (l)	3433	0.57	0.073	--	--	--	0.005	0.0123 U	0.0133 U	0.014 U	0.0176 U	0.005 U	0.005 U	0.005 U
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	--	0.004	0.01 U	0.01 U	0.005 U	0.01 U	0.01 U	0.005	0.002
Lead (7423)	0.0045 (l)	28	329	0.045 (l)	0.0007 (l) (*)	--	0.055	0.0025 (*)	--	--	--	0.02	0.000677 U	0.000105	0.0001 U	0.0001 U	0.00042	0.005	0.002
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	--	0.01	0.015	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	29	0.12	0.12	29	--	--	0.015	0.01 U	0.01 U	0.01 U	0.0211	0.01 U	0.012	0.008
BETX (µg/L)																			
EPA Method SW8021B																			
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (f)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (b)	--	--	--	--	--	--	22,000	--	--	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																			
EPA Method SW8290																			
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA												MTF							
												LW27S 0406072-01 6/10/2004	LW28S 0402080-02 2/17/2004	LW28S 0406040-01 6/7/2004	RW1 FY72J 10/22/2003	RW1 0402086-10 2/18/2004	RW1 0406074-10 6/10/2004	RW1 0408026-01 8/4/2004	
Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background								
Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational									
SEMIVOLATILES (µg/L)																			
EPA Method SW8270																			
2,4-Dimethylnaphthalene																			
4-Methylnaphthalene																			
Acenaphthene																			
bis(2-Ethylhexyl)phthalate																			
Carbazole																			
Dibenzofuran																			
Di-n-Butylphthalate																			
Fluorene																			
Naphthalene																			
Pentachlorophenol																			
Phenanthrene																			
Phenol																			
EPA Method SW8270SIM																			
Pentachlorophenol																			
PAHs (µg/L)																			
EPA Method SW8270 - SIM																			
2-Methylnaphthalene																			
Acenaphthene																			
Acenaphthylene																			
Anthracene																			
Benzo(a)anthracene																			
Benzo(a)pyrene																			
Benzo(b)fluoranthene																			
Benzo(k)fluoranthene																			
Benzo(g,h,i)perylene																			
Benzo(k)fluoranthene																			
Chrysene																			
Dibenzofuran																			
Fluoranthene																			
Fluorene																			
Indeno(1,2,3-cd)pyrene																			
Naphthalene																			
Phenanthrene																			
Pyrene																			
VOLATILES (µg/L)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene																			
1,3,5-Trimethylbenzene																			
4-Isopropyltoluene																			
Benzene																			
Ethylbenzene																			
Isopropylbenzene																			
m,p-Xylene																			
Methyl tert-Butyl Ether																			
n-Butylbenzene																			
n-Propylbenzene																			
Naphthalene																			
p-Xylene																			
sec-Butylbenzene																			
tert-Butylbenzene																			
Toluene																			
HYDROCARBONS (mg/L)																			
NWTPH-HCID																			
Gasoline																			
Diesel																			

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

												MTF	MTF	MTF	MTF	MTF	MTF	MTF	
SCREENING CRITERIA																			
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW27S	LW26S	LW28S	RW1	RW1	RW1	RW1
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406072-01 6/10/2004	0402080-02 2/17/2004	0406040-01 6/7/2004	FY72J 10/22/2003	0402086-10 2/18/2004	0406074-10 6/10/2004	0408025-01 8/4/2004
NWTPH-Dx TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	6.95	0.242 U	0.331	5.8	11.2 J	NA	6.12
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.486 U	0.484 U	0.613 U	0.8 U	1.22 J	NA	0.81 U
NWTPH-G TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	1.66	0.100 U	0.100 U	7.0	6.3	NA	5.48
PRIORITY POLLUTANT METALS (mg/L)																			
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.0243	0.001 U	0.001 U	0.005	0.00382	0.0118	0.006
Chromium (6010)	0.011 (k)	--	28 (k)	0.28 (j)	0.065 (i)	9433	0.57	0.074	--	--	---	0.005	0.0144	0.006 U	0.006 U	0.006 U	0.0093	0.0582	0.005 U
Copper (6010)	0.009	341	53	0.05 (i)	0.011 (i)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.01 U	0.01 U	0.005	0.0172	0.0286	0.01 U
Lead (7421)	0.0025 (*)	28	323	0.043 (j)	0.0007 (i) (*)	--	0.005	0.0025 (*)	--	--	---	0.02	0.0001 U	0.0001 U	0.000195	0.001 U	0.0006	0.00816	0.000111
Nickel (6010)	0.052	562	38	0.33 (i)	0.052 (i)	4.6	0.47	0.052	4.6	--	---	0.01	0.006 U	0.006 U	0.0094	0.01 U	0.006 U	0.0199	0.005 U
Zinc (6010)	0.120	106	3280	0.1 (i)	0.1 (i)	26	0.12	0.12	26	--	---	0.015	0.01 U	0.01 U	0.01 U	0.01	0.01 U	0.102	0.0244
BETX (µg/L) EPA Method SW8021B																			
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000		NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (d)	33000 (a)	--	2100	--	--	29,000	110,000	--		NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--		NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (b)	--	--	--	--	--	--	22,000	--		NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L) EPA Method SW8290																			
Total TEQ	--	--	--	--	--	5.1E-05	--	--	--	--	---	---	NA	NA	NA	0.0028	NA	NA	0.0014

BZTO104(e)023516

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA											MTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF											
Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration	Site-Specific Background	RW1 0411066-11 11/11/2004	GW22-1 0108238-05 8/31/2001	GW23-1 0108238-07 8/31/2001	GW24-1 0109006-02 9/4/2001	GW24-2 0109006-03 9/4/2001	GW25-1 0108238-06 8/31/2001	GW26-1 0108238-08 8/31/2001	GW27-1 0109006-04 9/4/2001											
Aquatic			Fresh			Fresh			Construction and Excavation Worker			Volatilization to Outdoor Air Occupational																	
Birds			Chronic			Consumption Only			CMC (Acute)			CCC (Chronic)			Organism Only														
Mammals																													
Date Collected:																													
SEMIVOLATILES (µg/L)																													
EPA Method SW8270																													
2,4-Dimethylnaphthalene											42	--	--	2120 (a)	--	850	--	--	850	--	3.02 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U	3.00 U		
2-Methylnaphthalene											620 (b)	--	284,000 (b)	--	--	--	--	--	--	1.02 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U			
Acenaphthene											520	--	--	1700 (a)	520 (a)	990	--	--	990	--	1.01 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
bis(2-Ethylhexyl)phthalate											3.0	8000	23000	--	--	2.2	--	--	2.2	--	1.01 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Carbazole											--	--	--	--	--	--	--	--	--	1.01 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Dibenzofuran											3.7	--	--	--	--	--	--	--	--	1.01 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Di-n-Butylphthalate											35	800	2,200,000	--	--	4500	--	--	4500	--	1.3 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Fluorene											3.9	--	--	--	--	5300	--	--	5300	--	1.01 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
Naphthalene											620	--	284,000	2300 (a)	620 (a)	--	--	--	880	--	3.51 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U		
Pentachlorophenol											15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	123 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	
Phenanthrene											6.3	--	284,000 (b)	--	--	--	--	--	--	1.01 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U
Phenol											110	--	--	10200 (a)	2640 (a)	1700,000	--	--	--	2.01 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	
EPA Method SW8270SIM																													
Pentachlorophenol											15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	NA	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	
PAHs (µg/L)																													
EPA Method SW8270 - SIM																													
2-Methylnaphthalene											620	--	284,000	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA		
Acenaphthene											520	--	--	1700 (a)	520 (a)	990	--	--	990	--	NA	0.220 U	0.480 U	0.0500 U	0.0500 U	0.250 U	NA	0.0500 U	
Acenaphthylene											620 (b)	--	284,000	--	--	--	--	--	--	NA	0.0500 U	0.340 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U		
Anthracene											13	--	--	--	--	40,000	--	--	40,000	--	NA	0.0500 U	0.0800 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Benzo(a)anthracene											0.027	--	--	--	--	0.018	--	--	0.018	9.1	NA	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Benzo(b)fluoranthene											0.014	--	--	--	--	0.018	--	--	0.018	0.54	NA	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Benzo(k)fluoranthene											6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	NA	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Benzo(g,h,i)perylene											--	--	--	--	--	--	--	--	--	--	NA	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Benzo(a)pyrene											--	--	--	--	--	0.018	--	--	0.018	--	NA	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Chrysene											--	--	--	--	--	0.018	--	--	0.018	--	NA	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Dibenzofuran											3.7	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene											6.16	--	--	5980 (a)	--	140	--	--	140	--	NA	0.0500 U	0.170 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Fluorene											3.9	--	--	--	--	5300	--	--	5300	--	NA	0.0500 U	0.660 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Indeno(1,2,3-cd)pyrene											--	--	--	--	--	0.018	--	--	0.018	--	NA	0.0500 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Naphthalene											620	--	284,000	2300 (a)	620 (a)	--	--	--	880	--	NA	0.410 U	1.06 U	0.0500 U	0.0500 U	0.280 U	NA	0.0500 U	
Phenanthrene											620 (b)	--	284,000 (b)	--	--	--	--	--	--	NA	0.6500 U	0.440 U	0.0500 U	0.0500 U	0.0500 U	0.0500 U	NA	0.0500 U	
Pyrene											--	--	--	--	--	4000	--	--	4000	--	NA	0.0500 U	0.240 U	0.0900 U	0.0500 U	0.0500 U	NA	0.0500 U	
VOLATILES (µg/L)																													
EPA Method SW8260																													
1,2,4-Trimethylbenzene											130(e)	--	200000 (e)	--	--	--	--	1300	--	84.4	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
1,3,5-Trimethylbenzene											130 (e)	--	200000 (e)	--	--	--	--	1400	--	22.5	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
4-Isopropyltoluene											9.8 (f)	--	104000 (f)	--	--	--	--	--	--	2.08	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
Benzene											130	--	200,000	5300 (a)	--	51 (e)	--	1700	15,000	6.12	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
Ethylbenzene											7.3	--	200000 (e)	32000 (a)	--	2100	--	28,000	110,000	31.8	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
Isopropylbenzene											130	--	200000 (e)	--	--	--	--	--	--	17	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
m,p-Xylene											13 (h)	--	8000 (h)	--	--	--	--	22,000 (i)	--	40.3	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U	0.400 U		
Methyl tert-Butyl Ether											--	--	--	--	--	--	--	31,000	550,000	1 U	NA	NA	NA	NA	NA	NA	NA	NA	
n-Butylbenzene											130 (e)	--	200000 (e)	--	--	--	--	--	--	2	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.680	0.200 U	0.200 U	
n-Propylbenzene											130 (e)	--	200000 (e)	--	--	--	--	--	--	17.2	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	4.63	0.200 U	0.200 U	
Naphthalene											620	--	284,000	2300 (a)	620 (a)	--	--	680	--	13	0.690	0.234	0.500 U	0.500 U	0.700	0.730	0.500 U		
o-Xylene											1.6	--	8000 (h)	--	--	--	--	220000 (i)	--	47.8	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	
sec-Butylbenzene											130 (e)	--	200000 (e)	--	--	--	--	--	--	4.37	0.260	5.58	0.200 U	0.200 U	0.200 U	0.810	0.200 U	0.200 U	
tert-Butylbenzene											130 (e)	--	200000 (e)	--	--	--	--	--	--	7.8	0.610	1.41	0.200 U	0.200 U	0.200 U	0.240	0.200 U	0.200 U	
Toluene											9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	1 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U	0.200 U
HYDROCARBONS (mg/L)																													
NWTPH-HCID																													
Gasoline											--	--	--	--	--	--	--	--	12	--	NA	0.25 U	Gasoline	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U	0.25 U
Diesel											--	--	--	--	--	--	--	--	--	NA	0.63 U	Diesel	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U	0.63 U

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											MTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	RW1 0411066-11 11/11/2004	GW22-1 0108236-05 8/31/2001	GW23-1 0108236-07 8/31/2001	GW24-1 0109006-02 9/4/2001	GW24-2 0109006-03 9/4/2001	GW25-1 0108236-06 8/31/2001	GW26-1 0108236-08 8/31/2001	GW27-1 0109006-04 9/4/2001
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational									
NWTPH-Dx TPH-Diesel Range TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	NA	NA	4.66	NA	NA	NA	NA	NA	NA
NWTPH-G TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	NA	NA	1.65 J	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/L)												1.5	0.00526	0.0248	0.0353	0.00521	0.019	0.00658	0.0315	0.00500 U
Arsenic (7020)	0.15 (f) (*)	18 (f)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	0.005	0.0243	0.00500 U	0.00500 U	0.0069	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (f)	0.065 (f)	3453	0.57	0.074	--	--	---	0.006	0.0244	0.00500 U	0.00500 U	0.0069	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Copper (6010)	0.009	341	53	0.05 (f)	0.011 (f)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.0100 U	0.0100 U	0.0577	0.0100 U	0.0100 U	0.0100 U	0.0100 U
Lead (7421)	0.0026 (f)	28	323	0.043 (f)	0.0007 (f) (*)	--	0.065	0.0025 (f)	--	--	---	0.02	0.00434	0.00200 U	0.00200 U	0.00940	0.00200 U	0.00200 U	0.00200 U	0.00200 U
Nickel (6010)	0.052	562	38	0.33 (f)	0.052 (f)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.00500 U	0.00500 U	0.00740	0.00500 U	0.00500 U	0.00500 U	0.00500 U
Zinc (6010)	0.120	105	1230	0.1 (f)	0.1 (f)	26	0.12	0.12	26	--	---	0.015	0.0384	0.0100 U	0.0100 U	0.0551	0.0100 U	0.0100 U	0.0100 U	0.0100 U
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (f)	32000 (a)	--	2100	--	--	29,000	110,000	--	---	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	16,000	--	--	200,000	78,000	--	---	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (f)	--	8000 (f)	--	--	--	--	--	--	22,000	--	---	NA	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	0.006364	NA	NA	NA	NA	NA	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

											BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF
											SCREENING CRITERIA							
Sample Identification: Laboratory Identification: Date Collected:											SCH56-GW 0110064-01 10/9/2001	SCH60-GW 0110064-02 10/9/2001	SCH61-GW 0110064-03 10/9/2001	SCH62-GW 0110064-04 10/9/2001	SCH63B-GW 0110079-01 10/10/2001	BT-01 -GW 0207039-01 7/8/2002	BT-02 -GW 0207039-02 7/8/2002	BT-03 -GW 0207039-03 7/8/2002
Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background							
Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational								
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	NA	NA	NA	NA	NA	NA
2-Methylnaphthalene	520 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	3.0	6000	73000	--	--	2.2	--	--	2.2	--	---	---	NA	NA	NA	NA	NA	NA
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Chlorofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	NA
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Phenol	110	--	--	10200 (a)	2880 (a)	1,700,000	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA
Acenaphthylene	520 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Fluoranthene	6.16	--	--	3460 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	0.540	NA	358	NA	NA	NA
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	0.240	NA	185	NA	NA	NA
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	0.560	NA	21.3	NA	NA	NA
Benzene	130	--	200,000	33000 (a)	--	51 (b)	--	--	51	11700	19,000	---	0.210	NA	0.270	NA	NA	NA
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	3.33	NA	9.73	NA	NA	NA
Isopropylbenzene	130	--	200,000 (e)	--	--	--	--	--	--	--	---	---	23.4	NA	65.8	NA	NA	NA
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	0.400 U	NA	0.400 U	NA	NA	NA
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	81,000	550,000	---	NA	NA	NA	NA	NA	NA
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	10.9	NA	72.4	NA	NA	NA
n-Propylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	--	---	---	79.1	NA	191	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	39.7	NA	256	NA	NA	NA
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	0.200 U	NA	0.200 U	NA	NA	NA
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	6.81	NA	31.5	NA	NA	NA
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	0.550	NA	0.550 U	NA	NA	NA
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	0.280	NA	0.970	NA	NA	NA
HYDROCARBONS (mg/L)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

											BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF		
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA																			
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background								
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational									
												SCH56-GW 0110064-01 10/9/2001	SCH80-GW 0110064-02 10/9/2001	SCH61-GW 0110064-03 10/9/2001	SCH62-GW 0110064-04 10/9/2001	SCH63B-GW 0110079-01 10/10/2001	BT-01-GW 0207039-01 7/8/2002	BT-02-GW 0207039-02 7/8/2002	BT-03-GW 0207039-03 7/8/2002	
NWTPH-Dx TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	1.14	0.250 U	1.10	0.966	796 J	1.94	0.625	22.2	
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	0.500 U	0.500 U	0.500 U	0.500 U	10.0 U	0.500 U	0.500 U	0.500 U	
NWTPH-G TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	1.21	0.100 U	6.02	0.100 U	NA	1.87	0.100 U	5.57	
PRIORITY POLLUTANT METALS (mg/L)																				
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g)(*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	NA	NA	NA	NA	NA	NA	NA	
Chromium (6010)	0.011 (k)	25 (k)	3	0.29 (j)	0.056 (j)	3433	0.57	0.074	--	--	---	0.005	NA	NA	NA	NA	NA	NA	NA	
Copper (6010)	0.009	341	53	0.05 (j)	0.011 (j)	--	0.013	0.009	--	--	---	0.004	NA	NA	NA	NA	NA	NA	NA	
Lead (7421)	0.0025 (i)	26	323	0.045 (j)	0.0007 (j)(*)	--	0.056	0.0025 (*)	--	--	---	0.02	NA	NA	NA	NA	NA	NA	NA	
Nickel (6010)	0.052	562	38	0.33 (j)	0.052 (j)	4.6	0.47	0.052	4.6	--	---	0.01	NA	NA	NA	NA	NA	NA	NA	
Zinc (6010)	0.120	106	1230	0.1 (j)	0.1 (j)	29	0.12	0.12	20	--	---	0.015	NA	NA	NA	NA	NA	NA	NA	
BETX (µg/L) EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	0.400 U	0.400 U	
Ethylbenzene	7.3	--	200000 (f)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	NA	NA	NA	NA	NA	15.6	0.500 U	
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA	NA	NA	5.43	0.544	
Xylenes, Total	19 (h)	--	3500 (h)	--	--	--	--	--	--	22,000	--	--	NA	NA	NA	NA	NA	1.50 U	1.50 U	
DIOXIN/FURANS (ng/L) EPA Method SW8290 Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	NA	NA	NA	NA	NA	NA	NA	NA	

BZTO104(e)023520

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

											BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF			
Sample Identification: Laboratory Identification: Date Collected		SCREENING CRITERIA																			
		Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	BT-04 -GW 0207061-04 7/9/2002	BT-05 -GW 0207039-04 7/8/2002	BT-06 -GW 0207061-03 7/9/2002	BT-07 -GW 0207039-06 7/8/2002	BT-11 -GW Dup of BT-07-GW 0207039-05 7/8/2002	BT-08 -GW 0207039-07 7/8/2002	BT-09 -GW 0207061-02 7/9/2002	BT-10 -GW 0207061-01 7/9/2002
		Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational									
SEMIVOLATILES (µg/L)																					
EPA Method SW8270		42	--	--	2120 (a)	--	850	--	--	850	--	---	---	NA	NA	NA	NA	NA	NA	NA	
2,4-Dimethylphenol		620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
2-Methylnaphthalene		520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene		520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Bis(2-Ethylhexyl)phthalate		3.0	8000	75000	--	--	2.2	--	--	2.2	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Carbazole		--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Dibenzofuran		3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Di-n-Butylphthalate		35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Fluorene		3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Naphthalene		620	--	284,000	2300 (a)	620 (a)	--	--	--	680	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Pentachlorophenol		15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene		6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Phenol		110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
EPA Method SW8270SIM																					
Pentachlorophenol		15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA	NA	
PAHs (µg/L)																					
EPA Method SW8270 - SIM																					
2-Methylnaphthalene		620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene		520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene		620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Anthracene		1.1	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene		0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene		0.014	--	--	--	--	0.018	--	--	0.018	0.85	---	---	NA	NA	NA	NA	NA	NA	NA	
Benzo(b)fluoranthene		6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Benzo(g,h,i)perylene		--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene		--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Chrysene		--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Dibenzofuran		3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene		6.16	--	--	3960 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Fluorene		3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene		--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Naphthalene		620	--	284,000	2300 (a)	620 (a)	--	--	--	680	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene		620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Pyrene		--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	NA	NA	
VOLATILES (µg/L)																					
EPA Method SW8260																					
1,2,4-Trimethylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	1300	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
1,3,5-Trimethylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	1400	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
4-Isopropyltoluene		9.8 (f)	--	104000 (f)	--	--	--	--	--	1700	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
Benzene		130	--	200,000	3200 (a)	--	51 (g)	--	--	51	1700	13,000	---	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene		7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	NA	NA	NA	NA	NA	NA	NA	
Isopropylbenzene		130	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
m,p-Xylene		13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	NA	NA	NA	NA	NA	NA	NA	
Methyl-tert-Butyl Ether		--	--	--	--	--	--	--	--	--	31,000	580,000	---	NA	NA	NA	NA	NA	NA	NA	
n-Butylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
n-Propylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Naphthalene		620	--	284,000	2300 (a)	620 (a)	--	--	--	680	--	---	---	NA	NA	NA	NA	NA	NA	NA	
o-Xylene		1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	NA	NA	NA	NA	NA	NA	NA	
sec-Butylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
tert-Butylbenzene		130 (a)	--	200000 (a)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Toluene		9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	NA	NA	NA	NA	NA	NA	NA	
HYDROCARBONS (mg/L)																					
NWTPH-HCID																					
Gasoline		--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
Diesel		--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

												BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF		
SCREENING CRITERIA																					
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	BT-04 -GW	BT-05 -GW	BT-06 -GW	BT-07 -GW	BT-11 -GW	BT-08 -GW	BT-09 -GW	BT-10 -GW	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0207061-04 7/8/2002	0207039-04 7/8/2002	0207061-03 7/8/2002	0207039-06 7/8/2002	Dup of BT-07-GW 0207039-05 7/8/2002	0207039-07 7/8/2002	0207061-02 7/8/2002	0207061-01 7/8/2002	
NWTPH-Dx TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	7.45	2.06 J	5.61	1.06	1.50 J	2.47	5.28	0.918	
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	
NWTPH-G TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	5.29	0.981	12.2	0.933	0.981	3.42	2.7	0.100 U	
PRIORITY POLLUTANT																					
METALS (mg/L)																					
Arsenic (7050)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	---	1.5	NA	NA	NA	NA	NA	NA	NA	
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (j)	0.065 (j)	3435	0.57	0.074	--	--	---	---	0.005	NA	NA	NA	NA	NA	NA	NA	
Copper (6010)	0.009	341	53	0.05 (j)	0.011 (j)	--	0.013	0.009	--	--	---	---	0.004	NA	NA	NA	NA	NA	NA	NA	
Lead (7421)	0.0025 (*)	28	323	0.048 (j)	0.0007 (j) (*)	--	0.005	0.0025 (*)	--	--	---	---	0.02	NA	NA	NA	NA	NA	NA	NA	
Nickel (6010)	0.052	562	38	0.33 (j)	0.052 (j)	4.6	0.47	0.052	4.6	--	---	---	0.01	NA	NA	NA	NA	NA	NA	NA	
Zinc (6010)	0.120	136	1200	0.1 (j)	0.1 (j)	28	0.12	0.12	28	--	---	---	0.015	NA	NA	NA	NA	NA	NA	NA	
BETX (µg/L)																					
EPA Method SW8021B																					
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	1.08	0.400 U	18.6	0.400 U	0.400 U	0.400 U	1.09	0.400 U	
Ethylbenzene	7.3	--	200000 (b)	32000 (a)	--	2100	--	--	29,000	10,000	--	--	6.10	0.500 U	24.9	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	4.99	3.40 J	15.6	2.40	1.30 J	7.83	4.49	0.923	
Xylenes, Total	13 (b)	--	8000 (b)	--	--	--	--	--	--	22,000	--	--	12.1	1.50 U	68.2	1.96	2.91	17.0	23.7	1.50 U	
DIOXIN/FURANS (ng/L)																					
EPA Method SW8290																					
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

											BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF		
SCREENING CRITERIA																				
Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW29S FZ04C	LW29S 0402080-08	LW29S 0406050-06	LW29S 0408006-06	LW29S 0411047-02	LW30S FZ04E	X Dup of LW30S FZ04L	LW30S 0402085-01	
Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		10/27/2003	2/17/2004	6/6/2004	8/2/2004	11/6/2004	10/27/2003	10/27/2003	2/18/2004	
SEMIVOLATILES (µg/L)																				
EPA Method SW8270																				
2,4-Dimethylnaphthalene	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	3 U	2.94 U	3.02 U	2.91 U	3.11 U	3.3 U	3.3 U	2.92 U
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	1 U	0.979 U	1.01 U	0.971 U	1.04 U	1.1 U	1.1 U	0.976 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1 U	0.979 U	1.01 U	0.971 U	1.04 U	1.1 U	1.1 U	0.976 U
Bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	---	---	1 U	0.979 U	1.01 U	0.971 U	1.04 U	1.1 U	1.1 U	0.976 U
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1 U	0.979 U	1.01 U	0.971 U	1.04 U	1.1 U	1.1 U	0.976 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	1 U	0.979 U	1.01 U	0.971 U	1.04 U	1.1 U	1.1 U	0.976 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	1 U	0.979 U	1.01 U	0.971 U	1.04 U	1.1 U	1.1 U	0.976 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	1 U	0.979 U	1.01 U	0.971 U	1.04 U	1.1 U	1.1 U	0.976 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	0.979 U	1.01 U	0.971 U	1.04 U	1.1 U	1.1 U	0.976 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	5 U	4.9 U	5.04 U	4.85 U	5.18 U	5.5 U	5.4 U	4.87 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1 U	0.979 U	1.01 U	0.971 U	1.04 U	1.1 U	1.1 U	0.976 U
Rhodol	110	--	--	10200 (a)	2580 (a)	1,700,000	--	--	--	--	---	---	2 U	1.86 U	2.01 U	1.84 U	2.07 U	2.2 U	2.2 U	1.96 U
EPA Method SW8270SIM																				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
PAHs (µg/L)																				
EPA Method SW8270 - SIM																				
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	0.1 U	NA	NA	NA	NA	0.11 U	0.11 U	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.84	0.84	0.84
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.126
Anthracene	15	--	--	--	--	40,000	--	--	40,000	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0584
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0485 U
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0485 U
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0485 U
Benzo(b)kylfluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0485 U
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0485 U
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0485 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	0.1 U	NA	NA	NA	NA	0.8	0.82	NA
Fluoranthene	6.16	--	--	3980 (a)	--	140	--	--	140	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0485 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	1.6	1.7	1.38
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0485 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.379
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	1.6	1.6	0.476
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	0.1 U	0.0489 U	0.05 U	0.05 U	0.0529 U	0.11 U	0.11 U	0.0485 U
VOLATILES (µg/L)																				
EPA Method SW8260																				
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	8.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200,000	5300 (a)	--	51 (a)	--	--	51	1700	13,000	---	1 U	0.4 U	0.3 U	0.3 U	0.3 U	1 U	1 U	0.4 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	28,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	2 U	2 U	2 U	2 U	1 U	1 U	2 U
Methyl-tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	3.5	3.2 M	3.13
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	25	23	26.7
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	5 U	1 U	1 U	1 U	1 U	5 U	5 U	1 U
p-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	2.5	2.4	1.64
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
HYDROCARBONS (mg/L)																				
NWTPH-HCID																				
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

											BTF	BTF	BTF	BTF	BTF	BTF	BTF	BTF		
SCREENING CRITERIA																				
Sample Identification: Laboratory Identification: Date Collected	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW26S	LW29S	LW29S	LW28S	LW29S	LW30S	X	LW30S
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCG (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		FZ04C	0402060-08	0406050-06	0408006-06	0411047-02	FZ04E	Dup of LW30S FZ04L	0402065-01
	10/27/2003	2/17/2004	6/8/2004	8/2/2004	11/8/2004	10/27/2003	10/27/2003	2/18/2004												
NWTPH-Dx																				
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	--		0.25 U	0.243 U	0.255 U	0.337	0.36	0.87	0.86	2.06
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--		0.5 U	0.485 U	0.511 U	0.941 U	0.603 U	0.5 U	0.486 U	
NWTPH-G																				
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	--		0.25 U	0.100 U	0.100 U	0.100 U	0.100 U	0.84	0.89	0.904
PRIORITY POLLUTANT																				
METALS (mg/L)																				
Arsenic (7090)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.002	0.00219	0.00146	0.00269 U	0.00329	0.013	0.019	0.0175
Chromium (6010)	0.011 (k)	--	25 (k)	0.28 (l)	0.065 (l)	3433	0.57	0.074	--	--	--	0.005	0.005 U	0.005 U	0.0178	0.0171	0.0163	0.005 U	0.006 U	0.008
Copper (6010)	0.009	341	53	0.06 (l)	0.011 (l)	--	0.013	0.009	--	--	--	0.004	0.002 U	0.01 U	0.01 U	0.01 U	0.002 U	0.002 U	0.01 U	
Lead (7421)	0.0025 (*)	29	333	0.043 (l)	0.0007 (l) (*)	--	0.085	0.0025 (*)	--	--	--	0.02	0.001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.001 U	0.001 U	0.0015
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	--	0.01	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.01 U	0.01 U	0.005 U
Zinc (6010)	0.120	108	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	--	0.015	0.007	0.01 U	0.01 U	0.01 U	0.01 U	0.006 U	0.007	0.01 U
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (f)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (f)	--	--	--	--	--	--	22,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
DIOXINFURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

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TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

											BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF		
SCREENING CRITERIA																				
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW30S	LW30S	LW30S	LW31S	LW31S	LW31S	LW31S	LW31S
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406050-08	0408020-04	0411047-04	FZ04G	0402080-03	0406060-02	0408060-02	0411052-02
												6/8/2004	8/3/2004	11/8/2004	10/27/2003	2/17/2004	6/8/2004	8/2/2004	11/8/2004	
NWTPH-Dx																				
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	--	2.23	1.44	0.747	0.59	0.242 U	0.469	0.576	0.568	
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	0.497 U	0.493 U	0.491 U	0.5 U	0.483 U	0.492 U	0.475 U	0.593	
NWTPH-G																				
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	--	1.0	0.719	0.637	0.25 U	0.100 U	0.100 U	0.100 U	0.100 U	
PRIORITY POLLUTANT METALS (mg/L)																				
Arsenic (7060)	0.15 (l) (*)	18 (l)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.0154	0.0163	0.0141	0.001 U	0.001 U	0.001 U	0.00148 U	0.00136
Chromium (6010)	0.011 (k)	--	26 (k)	0.20 (l)	0.065 (l)	3433	0.67	0.074	--	--	--	0.005	0.006 U	0.0147	0.0229	0.006 U	0.005 U	0.0187	0.0138	0.0182
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	--	0.004	0.01 U	0.01 U	0.01 U	0.002 U	0.01 U	0.01 U	0.01 U	0.01 U
Lead (7421)	0.0025 (*)	28	323	0.048 (l)	0.0007 (l) (*)	--	0.065	0.0025 (*)	--	--	--	0.02	0.00121	0.00079	0.00076	0.001 U	0.0001 U	0.0001 U	0.0001 U	0.00018
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	--	0.01	0.005 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U
Zinc (6010)	0.120	136	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	--	0.016	0.01 U	0.01 U	0.01 U	0.008	0.01 U	0.01 U	0.01 U	0.01 U
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000		NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (b)	32000 (a)	--	2100	--	--	28,000	110,000	--		NA	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--		NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (b)	--	8000 (b)	--	--	--	--	--	--	82,000	--		NA	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	--		NA	NA	NA	NA	NA	NA	NA	NA

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

											BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF		
SCREENING CRITERIA																				
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW32S FZ04H 10/27/2003	LW32S 0402080-05 2/17/2004	LW32S 0406050-04 6/8/2004	LW32S 0406006-04 8/2/2004	LW32S 0411052-03 11/9/2004	LW33S 0402080-04 2/17/2004	LW33S 0406050-03 6/8/2004	LW33S 0408006-03 8/2/2004
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		LW32S 0406050-04 6/8/2004	LW32S 0406006-04 8/2/2004	LW32S 0411052-03 11/9/2004	LW33S 0402080-04 2/17/2004	LW33S 0406050-03 6/8/2004	LW33S 0408006-03 8/2/2004		
NWTPH-Dx	--	--	--	--	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	---
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	---
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	---
NWTPH-G	--	--	--	--	--	--	--	--	--	12	---	---	---	---	---	---	---	---	---	---
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	--	---	---	---	---	---	---	---	---	---	---
PRIORITY POLLUTANT																				
METALS (mg/L)																				
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g/l) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.034	0.0233	0.0255	0.0314	0.0303	0.001 U	0.001 U	0.001 U
Chromium (6010)	0.011 (k)	--	26 (k)	0.29 (l)	0.065 (l)	3433	0.57	0.074	--	--	---	0.005	0.005 U	0.0124	0.0162	0.0125	0.0175	0.0113	0.005 U	0.005 U
Copper (5010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.002 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Lead (7421)	0.0025 (*)	26	325	0.043 (l)	0.0007 (l) (*)	--	0.066	0.0025 (*)	--	--	---	0.02	0.001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Nickel (5010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Zinc (5010)	0.120	105	1280	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.008	0.01 U	0.01 U	0.01 U	0.01 U	0.0111	0.01 U	0.01 U
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.8	--	200000 (f)	32000 (a)	--	2100	--	--	23,000	130,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (f)	--	89000 (f)	32000 (a)	--	--	--	--	22,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-05	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

												BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	LR													
SCREENING CRITERIA																																	
Oregon SLVs - Surface Water				Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW34S	LW34S	LW34S	LW34S	LW34S	LW42S	LW43S	LW44S													
Sample Identification: Laboratory Identification: Date Collected:				Fresh Aquatic	Fresh Birds	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		FZ04J	0402080-01	0406050-01	0408005-01	0411047-01	0411047-06	0411052-01	0411047-07													
													10/27/2003	2/17/2004	6/8/2004	6/2/2004	11/8/2004	11/8/2004	11/9/2004	11/8/2004													
NWTPH-Dx																																	
TPH-Diesel Range												--	--	--	--	--	--	--	--	--	--	0.25 U	0.242 U	0.242 U	0.242 U	0.251 U	2.23	1.91	3.77	NA			
TPH-Motor Oil Range												--	--	--	--	--	--	--	--	--	--	0.5 U	0.484 U	0.484 U	0.483 U	0.501 U	0.505 U	0.654	0.602 U	NA			
NWTPH-G																																	
TPH-Gasoline Range												--	--	--	--	--	--	--	12	--	--	0.25 U	0.100 U	0.100 U	0.100 U	0.100 U	1.72	0.988	2.94				
PRIORITY POLLUTANT																																	
METALS (mg/L)																																	
Arsenic (7060)												0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g/l)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.001	0.001 U	0.001 U	0.001 U	0.001 U	0.0152	0.0109	0.0123	0.0251	
Chromium (6910)												0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	5435	0.57	0.074	--	--	0.005	0.005 U	0.005 U	0.005 U	0.0116	0.005 U	0.0215	0.0176	0.0176	0.03540 U		
Copper (6010)												0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	0.004	0.002 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.010 U		
Lead (7461)												0.0025 (*)	28	323	0.045 (h)	0.0007 (l) (*)	--	0.005	0.0025 (*)	--	--	0.02	0.001 U	0.0001 U	0.00015	0.0001 U	0.00015 U	0.00336	0.00068	0.00717	0.03269 U		
Nickel (6010)												0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	0.01	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U	0.00500 U		
Zinc (6010)												0.120	105	1230	0.1 (l)	0.1 (l)	66	0.12	0.12	26	--	0.015	0.009	0.01 U	0.01 U	0.0133	0.01 U	0.01 U	0.01 U	0.01 U	0.0294	0.0100 U	
BETX (µg/L)																																	
EPA Method SW80218																																	
Benzene												130	--	200000	5300 (a)	--	51 (g)	--	61	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene												7.3	--	200000 (f)	32000 (a)	--	2100	--	28000	110000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene												9.8	--	104000	17500 (a)	--	15000	--	200000	76000	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total												13 (h)	--	8000 (b)	--	--	--	--	22000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																																	
EPA Method SW8290																																	
Total TEQ												--	--	--	--	--	5.1E-06	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

												LR	LR	LR	LR	LR	EP	EP	EP	
SCREENING CRITERIA																				
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW7S FY64F 10/20/2003	LW7S 0402099-03 2/19/2004	LW7S 0406059-05 6/9/2004	LW7S 0408019-01 8/3/2004	LW7S 0411051-10 11/9/2004	GW6-1 0108238-02 8/31/2001	GW15-1 0108238-04 8/31/2001	GW17-1 0108238-03 8/31/2001
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		GW6-1 0108238-02 8/31/2001	GW15-1 0108238-04 8/31/2001	GW17-1 0108238-03 8/31/2001					
NWTPH-Dx TPH-Diesel Range TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	0.6 0.5 U	0.333 0.476 U	0.651 0.587	0.516 0.501 U	0.413 0.497 U	NA	NA	NA	
NWTPH-G TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	--	2.1	1.2	0.38	1.73	1.63	NA	NA	NA	
PRIORITY POLLUTANT METALS (mg/L)																				
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g)(*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.012	0.0133	0.0146	0.0143	0.0136	0.0193	0.00705	0.0100
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (i)	0.025 (i)	3433	0.47	0.074	--	--	---	0.005	0.005 U	0.005 U	0.0148	0.0148	0.0186	0.00500 U	0.00500 U	0.00500 U
Copper (6010)	0.009	341	53	0.05 (i)	0.011 (i)	--	0.013	0.009	--	--	---	0.004	0.003	0.01 U	0.01 U	0.01 U	0.01 U	0.0100 U	0.0100 U	0.0100 U
Lead (7421)	0.0025 (*)	28	323	0.043 (i)	0.0007 (i)(*)	--	0.085	0.0026 (*)	--	--	---	0.02	0.001 U	0.000479	0.0001	0.000782	0.00073	0.00200 U	0.00200 U	0.00200 U
Nickel (6010)	0.052	562	38	0.33 (i)	0.052 (i)	4.6	0.47	0.052	4.6	--	---	0.01	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.00500 U	0.00500 U	0.00500 U
Zinc (6010)	0.120	105	1230	0.1 (i)	0.1 (i)	26	0.12	0.12	26	--	---	0.015	0.006 U	0.01 U	0.01 U	0.01 U	0.01 U	0.0100 U	0.0100 U	0.0100 U
BETX (µg/L) EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (b)	92000 (a)	--	2100	--	--	29,000	110,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (b)	--	8000 (b)	--	--	--	--	--	--	22,000	--	--	NA	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L) EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

												AR	AR	AR	
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											GW20-1 0109005-01 9/4/2001	LW10S 0402113-01 2/23/2004	LW10S 0406073-01 6/10/2004	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration					Site-Specific Background
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh OCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational				
SEMIVOLATILES (µg/L)															
EPA Method SW8270															
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	3.00 U	2.97 U	NA
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	1.00 U	0.99 U	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1.00 U	0.99 U	NA
Bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	---	---	1.00 U	0.99 U	NA
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1.00 U	0.99 U	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	1.00 U	0.99 U	NA
Di-n-Butylphthalate	35	600	2,200,000	--	--	4500	--	--	4500	--	---	---	1.00 U	0.99 U	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	1.00 U	0.99 U	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	1.00 U	0.99 U	NA
Phthalochlorophenol	15	--	1900	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	5.00 U	4.95 U	NA
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1.00 U	0.99 U	NA
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	1.00 U	1.98 U	NA
EPA Method SW8270SIM															
Pentachlorophenol	15	--	1900	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	0.500 U	0.493 U	0.478 U
PAHs (µg/L)															
EPA Method SW8270 - SIM															
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.0500 U	NA	NA
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	0.0500 U	NA	NA
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	0.0500 U	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	0.0500 U	NA	NA
Benzo(b)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	0.0500 U	NA	NA
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0500 U	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	0.0500 U	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0500 U	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0500 U	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA
Fluoranthene	6.16	--	--	3960 (a)	--	140	--	--	140	--	---	---	0.0500 U	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.0500 U	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0500 U	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.0500 U	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.0500 U	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	0.0500 U	NA	NA
VOLATILES (µg/L)															
EPA Method SW8260															
1,2,4-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	0.200 U	1 U	NA
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	0.200 U	1 U	NA
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	0.200 U	1 U	NA
Benzene	130	--	200000 (e)	33000 (a)	--	51 (g)	--	--	51	1700	19,900	---	0.200 U	0.4 U	NA
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	28,000	110,000	---	---	0.200 U	1 U	NA
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	0.200 U	1 U	NA
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	0.400 U	2 U	NA
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	NA	1 U	NA
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	0.200 U	1 U	NA
isopropylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	0.200 U	1 U	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.500 U	1 U	NA
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	0.200 U	1 U	NA
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	0.200 U	1 U	NA
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	0.200 U	1 U	NA
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	0.200 U	1 U	NA
HYDROCARBONS (mg/L)															
NWTPH-HCID															
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	0.25 U	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	0.65 U	NA	NA

7/19/05 \\Edmdata\wproc\231\006\132\PHIII RI 071905\PHIII RI Rpt. App D. Upper GW 1

Landau Associates

BZTO104(e)023533

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

												AR	AR	AR	
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											GW20-1 0109006-01 8/4/2001	LW10S 0402113-01 2/23/2004	LW10S 0406073-01 6/10/2004	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration					Site-Specific Background
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational				
NWTPH-Dx TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	--	--	NA	0.25 U	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	--	--	NA	0.801 U	NA
NWTPH-G TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	--	--	NA	NA	NA
PRIORITY POLLUTANT															
METALS (mg/L)															
Arsenic (7060)	0.15 (i) (*)	18 (i)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.00500 U	0.001 U	NA
Chromium (6010)	0.011 (i)	--	25 (i)	0.29 (i)	0.063 (i)	2433	0.57	0.074	--	--	--	0.005	0.00500 U	0.005 U	NA
Copper (6010)	0.009	341	53	0.05 (i)	0.011 (i)	--	0.013	0.009	--	--	--	0.004	0.0100 U	0.01 U	NA
Lead (7421)	0.0025 (*)	28	363	0.043 (i)	0.0007 (i) (*)	--	0.055	0.0025 (*)	--	--	--	0.02	0.00200 U	0.000428	NA
Nickel (6010)	0.052	562	38	0.33 (i)	0.052 (i)	4.6	0.47	0.052	4.6	--	--	0.01	0.00500 U	0.005 U	NA
Zinc (6010)	0.120	195	1230	0.1 (i)	0.1 (i)	26	0.12	0.12	26	--	--	0.015	0.0100 U	0.01 U	NA
BETX (µg/L)															
EPA Method SW8021B															
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA
Ethylbenzene	7.3	--	200000 (i)	32000 (a)	--	2100	--	--	29000	110000	--	--	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (h)	--	--	--	--	--	--	22,000	--	--	NA	NA	NA
DIOXIN/FURANS (ng/L)															
EPA Method SW8290															
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	--	--	NA	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

											PH II	PH II	PH II	PH II	PH II	PH II	PH II		
Sample Identification: Laboratory Identification Date Collected	SCREENING CRITERIA										B1 FY64D 10/20/2003	B1 0402099-01 2/19/2004	B1 0408019-02 8/3/2004	D FY82H 10/23/2003	D 0402105-03 2/20/2004	D 0408036-01 8/5/2004	J1 FY64H #####		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration								Site-Specific Background	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker									Volatilization to Outdoor Air Occupational
SEMIVOLATILES (µg/L)																			
EPA Method SW8270																			
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	4.4	2.87 U	2.94 U	3 U	2.97 U	3 U	3.2 U
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	3	0.956 U	0.98 U	1 U	0.991 U	1 U	1.4
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1 U	0.956 U	0.98 U	1 U	0.991 U	1 U	1.1 U
bis(2-Ethylhexyl)phthalate	3.0	8000	79000	--	--	2.2	--	--	2.2	--	---	---	6.3	0.956 U	0.98 U	1 U	0.991 U	1 U	1.1 U
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1 U	0.956 U	0.98 U	1 U	0.991 U	1 U	1.1 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	1 U	0.956 U	0.98 U	1 U	0.991 U	1 U	1.1 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	1 U	0.956 U	0.98 U	1 U	0.991 U	1 U	1.1 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	1 U	0.956 U	0.98 U	1 U	0.991 U	1 U	1.1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	3.5	1.23	0.98 U	1 U	0.991 U	1 U	2.1
Pentachlorophenol	16	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	5.2 U	4.78 U	4.6 U	6.1 U	4.96 U	5 U	5.3 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1 U	0.956 U	0.98 U	1 U	0.991 U	1 U	1.1 U
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	2.1 U	1.91 U	1.96 U	2 U	1.98 U	2 U	2.1 U
EPA Method SW8270S/M																			
Pentachlorophenol	15	--	1900	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	0.52 U	2.46 J	0.5 U	0.61	0.498 U	0.5 U	0.65
PAHs (µg/L)																			
EPA Method SW8270 - SIM																			
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.63	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	6.15	--	--	3980 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	12	26.6	3.13 J	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	3.6	9.84	1.16 J	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200,000 (e)	5300 (a)	--	51 (g)	--	--	51	1700	13,000	---	5.6	38.9	1.71 J	1 U	0.4 U	0.3 U	1 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	31	55.2	27.5 J	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	3.3	5.53	1.95 J	1 U	1 U	1.13 J	7.1
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	40	25.2	20.8 J	1 U	2 U	2 U	1 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	590,000	---	NA	1 U	1 U	NA	1 U	1 U	NA
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U
isopropylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	4.5	8.05	2.67 J	1 U	1 U	1.19 J	11
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	5 U	5.47	1.03 J	5 U	1 U	1 U	5 U
p-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	9.2	15.2	2.6 J	1 U	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	2.1	9.07	1 U	1 U	1 U	1 U	1 U

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BZTO104(e)023535

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	B1 FY64D 10/20/2003	B1 0402099-01 2/19/2004	B1 0408019-02 8/3/2004	D FY82H 10/23/2003	D 0402105-03 2/20/2004	D 0408036-01 8/5/2004	J1 FY64H #####
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational								
HYDROCARBONS (mg/L)																			
NWTPH-HCID																			
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	---	---	---	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx																			
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	---	---	---	2.7	2.26	0.978	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	---	---	---	0.5 U	0.477 U	0.503 U	NA	NA	NA	NA
NWTPH-G																			
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	1.2	2.57	0.652	NA	NA	NA	NA
PRIORITY POLLUTANT																			
METALS (mg/L)																			
Arsenic (7060)	0.15 (j) (*)	16 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.007	0.00305	0.00636	0.018	0.0213	0.0185	0.006
Chromium (6010)	0.011 (k)	25 (k)	5	0.29 (l)	0.065 (l)	3433	0.57	0.073	---	---	---	0.005	0.006	0.005 U	0.005 U	0.005 U	0.0078	0.019	0.005 U
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	---	---	0.004	0.015	0.0117	0.01 U	0.002 U	0.01 U	0.01 U	0.002
Lead (7241)	0.0025 (*)	28	336	0.043 (l)	0.0007 (l) (*)	--	0.069	0.0026 (j)	---	---	---	0.02	0.005	0.000657	0.0001 U	0.001 U	0.00211	0.0001	0.001 U
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.01	0.0075	0.005 U	0.01 U	0.005 U	0.005 U	0.01 U
Zinc (6010)	0.120	135	230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	---	---	0.015	0.019	0.01 U	0.0155	0.006 U	0.01 U	0.01 U	0.006 U
BETX (µg/L)																			
EPA Method SW8021B																			
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	---	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (l)	32000 (a)	--	2100	--	--	28,000	110,000	---	---	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (b)	--	--	--	--	--	--	22,000	---	---	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																			
EPA Method SW8290																			
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	PH II	PH II		
											J1	J1	K	K	K	K	K	LW1S		
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	0402105-01	0408019-04	K FY64G	0402099-01	0406060-01	0408020-02	0411052-05	FY64J
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		2/20/2004	8/3/2004	#####	2/19/2004	6/9/2004	8/3/2004	11/9/2004	#####
SEMIVOLATILES (µg/L)																				
EPA Method SW8270																				
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	2.89 U	3.02 U	NA	NA	NA	NA	NA	NA	3 U
2-Methylnaphthalene	520 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	1	1.01 U	NA	NA	NA	NA	NA	NA	1 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	0.963 U	1.01 U	NA	NA	NA	NA	NA	NA	1 U
bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	---	0.963 U	1.01 U	NA	NA	NA	NA	NA	NA	1 U
Carbazole	--	--	--	--	--	--	--	--	--	--	---	0.963 U	1.01 U	NA	NA	NA	NA	NA	NA	1 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	0.963 U	1.01 U	NA	NA	NA	NA	NA	NA	1 U
Di-n-Butylphthalate	35	600	2,200,000	--	--	4500	--	--	4500	--	---	0.963 U	1.01 U	NA	NA	NA	NA	NA	NA	1 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	0.963 U	1.01 U	NA	NA	NA	NA	NA	NA	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	1.41	1.01 U	NA	NA	NA	NA	NA	NA	1 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	4.82 U	5.03 U	NA	NA	NA	NA	NA	NA	5 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	0.963 U	1.01 U	NA	NA	NA	NA	NA	NA	1 U
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	1.93 U	2.01 U	NA	NA	NA	NA	NA	NA	2 U
EPA Method SW8270SIM																				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	1.13	0.5 U	NA	NA	NA	NA	NA	NA	0.5 U
PAHs (µg/L)																				
EPA Method SW8270 - SIM																				
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.83	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Fluoranthene	6.16	--	--	3980 (a)	--	140	--	--	140	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	NA	NA	0.1 U	NA	NA	NA	NA	NA	0.1 U
VOLATILES (µg/L)																				
EPA Method SW8260																				
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	---	6.76	1 U	NA	NA	NA	NA	NA	NA	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	0.4 U	0.3 U	NA	NA	NA	NA	NA	0.3 U	1 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	2.82	1 U	NA	NA	NA	NA	NA	1 U	1 U
Isopropylbenzene	130	--	200000 (f)	--	--	--	--	--	--	--	---	17	5.58 J	NA	NA	NA	NA	NA	NA	1 U
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	2 U	2 U	NA	NA	NA	NA	NA	2 U	1 U
Methyl tert-Butyl Ethol	--	--	--	--	--	--	--	--	--	31,000	650,000	1 U	1 U	1 U	NA	NA	NA	NA	NA	NA
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	1.74	1.06 J	NA	NA	NA	NA	NA	NA	1 U
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	21.7	13 J	NA	NA	NA	NA	NA	NA	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	4.77	1.47 J	NA	NA	NA	NA	NA	NA	5 U
o-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	1 U	1 U	NA	NA	NA	NA	NA	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	3.14	1 U	NA	NA	NA	NA	NA	NA	1 U
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	1 U	1 U	NA	NA	NA	NA	NA	NA	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	1 U	1 U	NA	NA	NA	NA	NA	1 U	1 U

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BZTO104(e)023537

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	PH II	PH II	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	J1	J1	K	K	K	K	LW1S	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0402105-01 2/20/2004	0408019-04 8/3/2004	K FY64G #####	0402098-01 2/19/2004	0406060-01 6/9/2004	0408020-02 8/3/2004	0411052-05 11/9/2004	FY64J #####
HYDROCARBONS (mg/L)																				
NWTPH-HCID																				
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx																				
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-G																				
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	0.25 U	0.100 U	0.100 U	0.100 U	0.100 U	0.25 U
PRIORITY POLLUTANT METALS (mg/L)																				
Arsenic (7060)	0.15 (l) (*)	16 (l)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.0087	0.0114	0.001 U	NA	NA	NA	NA	0.008
Chromium (6010)	0.011 (k)	--	26 (k)	0.29 (l)	0.065 (l)	0.433	0.67	0.074	--	--	---	0.005	0.0232	0.0188	0.006 U	NA	NA	NA	NA	0.005 U
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.01 U	0.006	NA	NA	NA	NA	0.003
Lead (7421)	0.0025 (c)	28	329	0.049 (l)	0.007 (l) (*)	--	0.065	0.0025 (*)	--	--	---	0.02	0.000428	0.000317	0.003 U	NA	NA	NA	NA	0.001 U
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.0151	0.005 U	0.03	NA	NA	NA	NA	0.01 U
Zinc (6010)	0.320	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.035	0.01 U	0.0121	0.014	NA	NA	NA	NA	0.007
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	0.4 U	0.3 U	0.3 U	NA	NA
Ethylbenzene	7.3	--	200000 (l)	32000 (a)	--	2100	--	--	28,000	110,000	--	--	NA	NA	NA	1 U	1 U	1 U	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	--	NA	NA	NA	1 U	1 U	1 U	NA	NA
Xylenes, Total	13 (h)	--	8000 (h)	--	--	--	--	--	--	25,000	---	--	NA	NA	NA	1 U	1 U	1 U	NA	NA
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	PH II	PH II
											LW1S 0402098-02 2/19/2004	LW1S 0406060-02 6/9/2004	LW1S 0408020-01 8/3/2004	LW1S 0411052-06 11/9/2004	LW11S FY72I 10/22/2003	LW11S 0402098-06 2/18/2004	LW11S 0406074-09 6/10/2004	LW11S 0408035-01 8/5/2004
Sample Identification: Laboratory Identification: Date Collected	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background						
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational							
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	NA	NA	NA	NA	3 U	
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	2.9	4.2	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	1 U	0.98 U	
Bis(2-Ethylhexyl)phthalate	3.0	4000	73000	--	--	2.2	--	--	2.2	--	---	---	NA	NA	NA	1 U	0.98 U	
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	1 U	0.98 U	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	1 U	0.98 U	
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	NA	NA	NA	1 U	0.98 U	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	1 U	0.98 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	3.2	9.22	
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	900	6350	
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	1 U	0.98 U	
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	NA	NA	NA	2 U	1.96 U	
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	
Acenaphthene	520	--	284,000	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	
Benzo(b)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.63	---	---	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	
Fluoranthene	6.16	--	--	3800 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	1300	---	---	---	NA	NA	NA	73	160 J	
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	1400	---	---	---	NA	NA	NA	16	34.8 J	
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	---	---	---	NA	NA	NA	3.2	4.32 J	
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	---	NA	NA	NA	2.1	30.3 J	
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	NA	NA	NA	1 U	14	
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	7.6	15.9 J	
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (f)	---	---	NA	NA	NA	2 U	20	
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	650,000	---	NA	NA	NA	--	--	
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	3.7 M	3.41 J	
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	13	18.6 J	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	5 U	15.1 J	
p-Xylene	1.8	--	100,000 (h)	--	--	--	--	--	--	22000 (f)	---	---	NA	NA	NA	1 U	23	
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	4.7	7.19 J	
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	1.1	1.1 J	
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	NA	NA	NA	1 U	1 U	

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Landau Associates

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**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	PH II		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW1S	LW1S	LW1S	LW1S	LW1S	LW1S	LW1S	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0402098-02	0406060-02	0408020-01	0411052-06	0410222-03	0402086-06	0406074-09	0408035-01
													FY72j	FY72j	FY72j	FY72j	FY72j	FY72j	FY72j	
HYDROCARBONS (mg/L)																				
NWTPH-HCID																				
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	
Diesel	--	--	--	--	--	--	--	--	--	2	---	---	NA	NA	NA	NA	NA	NA	NA	
NWTPH-Dx																				
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	2.3	3.07	NA	
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	0.6 U	0.573	NA	
NWTPH-G																				
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	0.100 U	0.100 U	0.100 U	0.100 U	2.8	6.8	NA	
PRIORITY POLLUTANT METALS (mg/L)																				
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	NA	NA	NA	NA	0.006	0.00448	0.00458	
Chromium (6010)	0.011 (k)	25 (k)	25 (k)	0.28 (l)	0.065 (l)	3433	0.57	0.074	---	--	---	0.005	NA	NA	NA	NA	0.005 U	0.0069	0.0173	
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	---	--	---	0.004	NA	NA	NA	NA	0.002	0.01 U	0.01 U	
Lead (7421)	0.0025 (*)	28	323	0.043 (l)	0.0007 (l) (*)	--	0.065	0.0025 (*)	---	--	---	0.02	NA	NA	NA	NA	0.001 U	0.000237	0.0001	
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	NA	NA	NA	NA	0.01 U	0.005 U	0.005 U	
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	NA	NA	NA	NA	0.006 U	0.01 U	0.01 U	
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	---	0.4 U	0.3 U	0.3 U	NA	NA	NA	NA	
Ethylbenzene	7.3	--	200000 (h)	98000 (a)	--	2100	--	--	29,000	110,000	---	---	1 U	1 U	1 U	NA	NA	NA	NA	
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	NA	NA	NA	NA	
Xylenes, Total	13 (h)	--	8000 (h)	--	--	--	--	--	--	22,000	---	---	1 U	1 U	1 U	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	0.8551	NA	NA	

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										PH II	PH II	PH II	PH II	PH II	PH II	PH II	PH II			
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW11S	N	OX1S	OX1S	OX1S	OX1S	OX2S	OX2S	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0411066-09	0408066-02	FY72G	0402096-07	0406074-01	0408026-02	0402086-09	0406074-02	
													11/11/2004	8/10/2004	10/22/2003	2/18/2004	6/10/2004	8/4/2004	2/18/2004	6/10/2004	
SEMIVOLATILES (µg/L)																					
EPA Method SW8270																					
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	--	2.92 U	4.48	NA	NA	2.95 U	3 U	NA	3.07 U		
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	1.86	37.7	NA	NA	5.53	6.81	NA	6.53		
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	0.972 U	1.19	NA	NA	0.983 U	1 U	NA	1.02 U		
Bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	--	0.972 U	1.23	NA	NA	0.983 U	1 U	NA	1.02 U		
Carbazole	--	--	--	--	--	--	--	--	--	--	--	0.972 U	2.05	NA	NA	0.983 U	1 U	NA	1.02 U		
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	0.972 U	0.999 U	NA	NA	0.983 U	1 U	NA	1.02 U		
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	0.972 U	0.999 U	NA	NA	0.983 U	1 U	NA	1.02 U		
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	0.972 U	2.55	NA	NA	0.983 U	1 U	NA	1.02 U		
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	680	--	--	2.24	53.7	NA	NA	10.4	11	NA	13.5		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	184	5 U	NA	NA	58.2	8 U	NA	5030		
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	--	0.972 U	1.43	NA	NA	0.983 U	1 U	NA	1.02 U		
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	--	1.94 U	2 U	NA	NA	1.97 U	2 U	NA	2.05 U		
EPA Method SW8270SIM																					
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	NA	NA	0.69	62.1	NA	NA	5320	NA		
PAHs (µg/L)																					
EPA Method SW8270 - SIM																					
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA		
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	NA	1.16	NA	NA	NA	NA	NA	NA		
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	NA	0.253	NA	NA	NA	NA	NA	NA		
Anthracene	18	--	--	--	--	40,000	--	--	40,000	--	--	NA	0.121	NA	NA	NA	NA	NA	NA		
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	NA	0.091	NA	NA	NA	NA	NA	NA		
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	NA	0.0506 U	NA	NA	NA	NA	NA	NA		
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	--	NA	0.0506 U	NA	NA	NA	NA	NA	NA		
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	NA	0.0506 U	NA	NA	NA	NA	NA	NA		
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	NA	0.0506 U	NA	NA	NA	NA	NA	NA		
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	NA	0.0506 U	NA	NA	NA	NA	NA	NA		
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA		
Fluoranthene	6.16	--	--	3990 (a)	--	140	--	--	140	--	--	NA	0.273	NA	NA	NA	NA	NA	NA		
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	NA	2.49	NA	NA	NA	NA	NA	NA		
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	NA	0.0506 U	NA	NA	NA	NA	NA	NA		
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	680	--	--	NA	54.5	NA	NA	NA	NA	NA	NA		
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	NA	1.42	NA	NA	NA	NA	NA	NA		
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	NA	0.273	NA	NA	NA	NA	NA	NA		
VOLATILES (µg/L)																					
EPA Method SW8260																					
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	1300	--	--	91.2	518	NA	NA	208	231 J	NA	307		
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	1400	--	--	21.6	124	NA	NA	73.5	83 J	NA	83.1		
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	4.26	5.33	NA	NA	6.85	6.84 J	NA	10.1		
Benzene	130	--	200,000	3200 (a)	--	51 (g)	--	--	51	1700	13,000	2.38	424	NA	NA	112	118 J	NA	6.51		
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	--	21.4	744	NA	NA	118	163 J	NA	91.3		
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	--	11.1	61.5	NA	NA	35.5	49.7 J	NA	46.5		
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	22000 (i)	--	--	30.9	904	NA	NA	273	466 J	NA	105		
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	31,000	850,000	--	1 U	1 U	NA	NA	1 U	1 U	NA	1 U		
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	2.94	5.14	NA	NA	4.85	4.21 J	NA	6.92		
o-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	14.1	102	NA	NA	54.7	47.8 J	NA	62.6		
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	680	--	--	8.69	112	NA	NA	18.2	17.7 J	NA	22.6		
o-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	22000 (i)	--	--	44.2	446	NA	NA	112	161 J	NA	190		
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	5.12	4.72	NA	NA	9.01	8.09 J	NA	22.9		
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	1.42	1 U	NA	NA	1.95	1.83 J	NA	2.91		
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	1 U	92.3	NA	NA	4.66	8.87 J	NA	1.19		

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BZTO104(e)023541

**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	PH II	PH II		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW11S	N	OX1S	OX1S	OX1S	OX1S	OX2S	OX2S	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0411066-09 11/11/2004	0409066-02 8/10/2004	0409066-02 10/22/2003	0402066-07 2/18/2004	0406074-01 6/10/2004	0408026-02 8/4/2004	0402066-09 2/18/2004	0406074-02 6/10/2004	
HYDROCARBONS (mg/L)																					
NWTPH-HC/D																					
Gasoline																					
Diesel																					
NWTPH-Dx																					
TPH-Diesel Range																					
TPH-Motor Oil Range																					
NWTPH-G																					
TPH-Gasoline Range																					
PRIORITY POLLUTANT																					
METALS (mg/L)																					
Arsenic (7060)																					
Chromium (6010)																					
Copper (6010)																					
Cadmium (7421)																					
Nickel (6010)																					
Zinc (6010)																					
BETX (µg/L)																					
EPA Method SW80213																					
Benzene																					
Ethylbenzene																					
Toluene																					
Xylenes, Total																					
DIOXIN/FURANS (ng/L)																					
EPA Method SW8290																					
Total TEQ																					

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	PH II			
											OX2S 0408026-03 8/4/2004	OX2S 0411066-10 11/11/2004	Y Dup of OX2S 0411066-02 11/11/2004	OX3S FY72H 10/22/2003	OX3S 0402086-06 2/18/2004	OX3S 0406074-03 6/10/2004	OX3S 0408026-04 8/4/2004	OX4S 0402086-11 2/18/2004		
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background								
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		OX2S	OX2S	Y	OX3S	OX3S	OX3S	OX4S	
SEMIVOLATILES (µg/L)																				
EPA Method SW8270																				
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	3 U	2.98 U	3 U	NA	NA	2.93 U	13.9	NA
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	6.24	6.69 J	23.9 J	NA	NA	13.5	9.63	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1 U	0.994 U	1 U	NA	NA	0.977 U	1 U	NA
Bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	---	---	1 U	0.994 U	1 U	NA	NA	0.977 U	1 U	NA
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1 U	0.994 U	1 U	NA	NA	0.977 U	1 U	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	1 U	0.994 U	1 U	NA	NA	0.977 U	1 U	NA
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	1 U	0.994 U	1.18	NA	NA	0.977 U	1.13 U	NA
Fluorene	3.9	--	--	--	--	6300	--	--	6300	--	---	---	1 U	0.994 U	1 U	NA	NA	0.977 U	1 U	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	9.21	10.4 J	22.2 J	NA	NA	29.9	20.2	NA
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	1500	727 J	1150 J	NA	NA	728	59.2	NA
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1 U	0.994 U	1 U	NA	NA	0.977 U	1 U	NA
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	2 U	1.99 U	2 U	NA	NA	1.96 U	16.7	NA
EPA Method SW8270SIM																				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	130	344	NA	NA	1410
PAHs (µg/L)																				
EPA Method SW8270 - SIM																				
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	---	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	---	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	6.16	--	--	3880 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L)																				
EPA Method SW8260																				
1,2,4-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1300	--	---	233 J	320 J	212 J	NA	NA	331	360	NA
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	--	---	72.3 J	76.8	70.1	NA	NA	82.3	113	NA
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	9.35 J	14.6 J	11.1 J	NA	NA	12.1	12.5	NA
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,300	--	5.3 J	3.49	3.67	NA	NA	130	156	NA
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	23,000	110,000	--	---	74.7 J	48.9	50	NA	NA	206	250	NA
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	39.4 J	32.8	29.9	NA	NA	70.1	79.1	NA
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	---	89.7 J	62.7	61.5	NA	NA	477	605	NA
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	--	1 U	1 U	1 U	NA	NA	1 U	1 U	NA
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	6.37 J	11.2 J	8.71 J	NA	NA	8.37	8.92	NA
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	40.7 J	46	39.4	NA	NA	103	78.4	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	690	--	---	21.6 J	23.3	25.2	NA	NA	48.7	50.4	NA
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	---	137 J	99.2	110	NA	NA	225	295	NA
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	13.6 J	16	13.4	NA	NA	15	13	NA
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	2.14 J	2.74	2.22	NA	NA	2.61	2.34	NA
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	---	1.38 J	1 U	1 U	NA	NA	7.84	21.6	NA

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TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	PH II			
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	Y								
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		OX2S	OX2S	Dup of OX2S	OX3S	OX3S	OX3S	OX3S	OX3S	OX4S
													0409026-03 8/4/2004	0411066-10 11/11/2004	0411066-02 11/11/2004	FY72H 10/22/2003	0402086-06 2/18/2004	0406074-03 6/10/2004	0406026-04 6/4/2004	0402086-11 2/18/2004	
HYDROCARBONS (mg/L)																					
NWTPH-HCID																					
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
NWTPH-Dx																					
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
NWTPH-G																					
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
PRIORITY POLLUTANT																					
METALS (mg/L)																					
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.00752	0.00915	0.00768	NA	NA	0.0212	0.0148	NA	
Chromium (6010)	0.013 (k)	26 (k)	53	0.29 (l)	0.085 (l)	3433	0.57	0.074	---	---	---	0.005	0.005 U	0.0191	0.0141	NA	NA	0.0119	0.0159	NA	
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	---	---	---	0.004	0.01 U	0.01 U	0.01 U	NA	NA	0.01 U	0.01 U	NA	
Lead (7421)	0.0025 (*)	26	323	0.043 (l)	0.0007 (l) (*)	---	0.065	0.0025 (*)	---	---	---	0.02	0.000258	0.0401	0.0214	NA	NA	0.0501 U	0.000426	NA	
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	0.005 U	NA	NA	0.005 U	0.0435	NA	
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.01 U	0.0299	0.0247	NA	NA	0.01 U	0.019	NA	
BETX (µg/L)																					
EPA Method SW8021B																					
Benzene	130	--	200000	5300 (a)	--	51 (g)	---	---	51	1700	13000	---	NA	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	7.3	--	200000 (b)	182000 (a)	--	2100	---	---	20,000	110,000	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
Toluene	9.8	--	104000	17500 (a)	--	15,000	---	---	200,000	78,000	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
Xylenes, Total	13 (h)	--	8000 (b)	---	--	---	---	---	---	22,000	---	---	NA	NA	NA	NA	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																					
EPA Method SW8290																					
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	0.0292	0.57142	NA	NA	NA	NA	NA	NA	

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

											PH II	PH II	PH II	PH II	PH II	PH II	PH II	PH II		
SCREENING CRITERIA																				
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	OX4S	OX4S	OX5S	OX5S	OX5S	OX5S	OX5S	OX6S
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh COC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406074-04 6/10/2004	0406026-05 8/4/2004	0406074-05 10/22/2003	0402086-01 2/18/2004	0406074-05 6/10/2004	0406026-06 8/4/2004	0411066-03 11/11/2004	0406074-05 10/22/2003
SEMIVOLATILES (µg/L)																				
EPA Method SW8270																				
2,4-Dimethylphenol	42	--	--	2120 (a)	--	860	--	--	860	--	--	--	2.98 U	7.25	NA	NA	2.92 U	3 U	3.03 U	NA
2-Methylnaphthalene	620 (b)	--	284000 (h)	--	--	--	--	--	--	--	--	--	42.9	20.7	NA	NA	0.973 U	1 U	1.01 U	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	0.993 U	1 U	NA	NA	0.973 U	1 U	1.01 U	NA
bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	--	--	1.42	1 U	NA	NA	0.973 U	1 U	1.01 U	NA
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	0.993 U	1 U	NA	NA	0.973 U	1 U	1.01 U	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	0.993 U	1 U	NA	NA	0.973 U	1 U	1.01 U	NA
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	--	1.53	1.1 U	NA	NA	0.973 U	1 U	1.01 U	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	0.993 U	1 U	NA	NA	0.973 U	1 U	1.01 U	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	43.7	28.5	NA	NA	0.973 U	1 U	1.01 U	NA
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	634	96.7	NA	NA	4.86 U	5 U	5.05 U	NA
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	--	--	0.993 U	1 U	NA	NA	0.973 U	1 U	1.01 U	NA
Phenol	110	--	--	10200 (a)	2860 (a)	1,700,000	--	--	--	--	--	--	1.99 U	2 U	NA	NA	1.96 U	2 U	2.02 U	NA
EPA Method SW8270SIM																				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	NA	NA	0.5 U	0.482 U	NA	NA	NA	2100
PAHs (µg/L)																				
EPA Method SW8270 - SIM																				
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6.16 (c)	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	6.16	--	--	3850 (a)	--	140	--	--	140	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	--	NA	NA	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L)																				
EPA Method SW8260																				
1,2,4-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1300	--	--	524	532	NA	NA	1 U	1 U	1 U	NA
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	--	--	158	141	NA	NA	1 U	1 U	1 U	NA
4-Isopropyltoluene	9.6 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	--	22.3	15.4	NA	NA	1 U	1 U	1 U	NA
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	61	1700	13,000	--	109	77	NA	NA	0.3 U	0.3 U	0.3 U	NA
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	292	303	NA	NA	1 U	1 U	1 U	NA
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	--	--	106	88.2	NA	NA	1 U	1 U	1 U	NA
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	236	324	NA	NA	2 U	2 U	2 U	NA
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	650,000	--	1 U	1 U	NA	NA	1 U	1 U	1 U	NA
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	17.7	10.8	NA	NA	1 U	1 U	1 U	NA
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	125	114	NA	NA	1 U	1 U	1 U	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	64.9	66	NA	NA	1 U	1 U	1 U	NA
o-Xylene	1.6	--	8000 (h)	--	--	--	--	--	--	22,000 (i)	--	--	318	336	NA	NA	1 U	1 U	1 U	NA
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	24.6	14.6	NA	NA	1 U	1 U	1 U	NA
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	3.95	2.82	NA	NA	1 U	1 U	1 U	NA
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	2.77	6.91	NA	NA	1 U	1 U	1 U	NA

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**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA											PH II		PH II		PH II		PH II		PH II		PH II		PH II	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	OX4S	OX4S	OX5S	OX5S	OX5S	OX5S	OX5S	OX5S	OX6S				
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406074-04 6/10/2004	0408026-05 8/4/2004	0X5S FY72A 10/22/2003	0402088-01 2/18/2004	0406074-05 6/10/2004	0408026-06 8/4/2004	0411066-03 11/11/2004	0X6S FY72B 10/22/2003					
HYDROCARBONS (mg/L)																									
NWTPH-HCID																									
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
NWTPH-Dx																									
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
NWTPH-G																									
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
PRIORITY POLLUTANT																									
METALS (mg/L)																									
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g/l*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.0145	0.0137	NA	NA	0.0095	0.014	0.0135	NA	NA	NA	NA		
Chromium (6010)	0.011 (k)	341	25 (k)	0.89 (l)	0.065 (l)	3433	0.57	0.074	---	---	---	0.005	0.034	0.006 U	NA	NA	0.0126	0.0155	0.005 U	NA	NA	NA	NA		
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	---	0.013	0.009	---	---	---	0.004	0.0256	0.01 U	NA	NA	0.0001 U	0.0001 U	0.01 U	NA	NA	NA	NA		
Lead (7421)	0.0025 (c)	25	323	0.043 (l)	0.0007 (l) (*)	---	0.065	0.0025 (l)	---	---	---	0.02	0.00839	0.00107	NA	NA	0.0001 U	0.0001 U	0.00048 U	NA	NA	NA	NA		
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.0219	0.0099	NA	NA	0.005 U	0.005 U	0.005 U	NA	NA	NA	NA		
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.0674	0.0114	NA	NA	0.01 U	0.01 U	0.01 U	NA	NA	NA	NA		
BETX (µg/L)																									
EPA Method SW8021B																									
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Ethylbenzene	7.3	--	200000 (f)	82000 (a)	--	2100	--	--	29000	110000	---	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
Xylenes, Total	13 (h)	--	6000 (h)	--	--	--	--	--	--	22,000	---	--	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		
DIOXIN/FURANS (ng/L)																									
EPA Method SW8290																									
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA		

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TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										PH II	PH II	PH II	PH II	PH II	PH II				
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	Y							
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		OX6S 0402086-02 2/16/2004	OX6S 0406074-06 6/10/2004	OX6S 0409026-07 8/4/2004	Dup of OX6S 0408026-01 8/4/2004	OX6S 0411066-04 11/11/2004	OX7S FY72C 10/22/2003	OX7S 0402086-03 2/16/2004	
SEMIVOLATILES (µg/L)																				
EPA Method SW8270																				
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	--	--	NA	3 U	3 U	3 U	295 U	NA	NA	
2-Methylnaphthalene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	--	--	NA	1 U	1 U	1 U	0.984 U	NA	NA	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	NA	1 U	1 U	1 U	0.984 U	NA	NA	
Bis(2-Ethylhexyl)phthalate	30	8000	79000	--	--	2.2	--	--	2.2	--	--	--	NA	1 U	1 U	1 U	0.984 U	NA	NA	
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	NA	1 U	1 U	1 U	0.984 U	NA	NA	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	NA	1 U	1 U	1 U	0.984 U	NA	NA	
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	--	NA	1 U	1 U	1 U	0.984 U	NA	NA	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	NA	1 U	1 U	1 U	0.984 U	NA	NA	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	NA	1 U	1 U	1 U	0.984 U	NA	NA	
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	NA	3260	604	498	624	NA	NA	
Phenanthrene	6.3	--	284,000 (b)	--	--	--	--	--	--	--	--	--	NA	1 U	1 U	1 U	0.984 U	NA	NA	
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	--	--	NA	2 U	2 U	2 U	197 U	NA	NA	
EPA Method SW8270SIM																				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	527	NA	NA	NA	NA	720	166	
PAHs (µg/L)																				
EPA Method SW8270 - SIM																				
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene	520	--	284,000	--	--	990	--	--	990	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Anthracene	18	--	--	--	--	40,000	--	--	40,000	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	--	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.63	--	--	NA	NA	NA	NA	NA	NA	NA	
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Benzo(d,h)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene	6.16	--	--	9980 (a)	--	140	--	--	140	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	NA	NA	NA	NA	NA	NA	NA	
Phenanthrene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA	
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	--	NA	NA	NA	NA	NA	NA	NA	
VOLATILES (µg/L)																				
EPA Method SW8260																				
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	--	--	NA	83.7	77.6 J	75.9 J	1 U	NA	NA	
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	--	--	NA	17.7	10.9 J	11.9 J	1 U	NA	NA	
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	--	NA	2.71	3.4 J	3.7 J	1 U	NA	NA	
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	--	NA	0.3 U	0.3 U	0.3 U	0.3 U	NA	NA	
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	NA	1.31	1 U	1.19 J	1 U	NA	NA	
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	--	--	NA	4.94	2.23 J	2.43 J	1.8	NA	NA	
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	NA	2 U	2 U	2 U	2 U	NA	NA	
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	560,000	--	NA	1 U	1 U	1 U	1 U	NA	NA	
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	NA	2.06	2.1 J	2.31 J	1 U	NA	NA	
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	NA	9.71	4.69 J	5.33 J	1 U	NA	NA	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	NA	5.3	3.92 J	4.48 J	1 U	NA	NA	
p-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	NA	5.49	3.11 J	3.36 J	1 U	NA	NA	
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	NA	6.54	8.04 J	7.9 J	1.5	NA	NA	
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	NA	1 U	1 U	1 U	1 U	NA	NA	
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	1 U	1 U	1 U	1 U	NA	NA	

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TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA											PH II							
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	Y						
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		OX6S 0402086-02 2/18/2004	OX6S 0406074-06 6/10/2004	OX6S 0408026-07 8/4/2004	Dup of OX6S 0408026-01 8/4/2004	OX6S 0411066-04 11/11/2004	OX7S FY72C 10/22/2003	OX7S 0402066-03 2/18/2004
HYDROCARBONS (mg/L)																			
NWTPH-HCID																			
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx																			
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
NWTPH-G																			
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT																			
METALS (mg/L)																			
Arsenic (7060)	0.15 (l) (*)	18 (l)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	NA	0.013	0.013	0.0127	0.0133	NA	NA
Chromium (6010)	0.011 (k)	--	26 (k)	0.20 (l)	0.095 (l)	3433	0.57	0.074	--	--	---	0.005	NA	0.0147	0.0127	0.0142	0.005 U	NA	NA
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	NA	0.0001 U	0.0001 U	0.0001 U	0.01 U	NA	NA
Lead (7421)	0.0025 (*)	28	323	0.043 (l)	0.0007 (l) (*)	--	0.066	0.0025 (*)	--	--	---	0.02	NA	0.0001 U	0.0001 U	0.0001 U	0.00194	NA	NA
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	NA	0.005 U	0.005 U	0.005 U	0.25	NA	NA
Zinc (6010)	0.120	135	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	NA	0.01 U	0.01 U	0.01 U	0.0633	NA	NA
BETX (µg/L)																			
EPA Method SW8021B																			
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (f)	32000 (a)	--	2100	--	--	20,000	110,000	--	--	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (f)	--	8000 (f)	--	--	--	--	--	--	22,000	--	--	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (pg/L)																			
EPA Method SW8290																			
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	0.0087	NA	0.006561	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	OX7S 0406074-07 6/10/2004	OX7S 0408026-08 8/4/2004	OX7S 0411066-05 11/11/2004	OX8S FY72E 10/22/2003	Y Dup of OX6S FY72D 10/22/2003	OX8S 0402086-04 2/18/2004	OX8S 0406074-08 6/10/2004
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational								
SEMIVOLATILES (µg/L)																			
EPA Method SW8270																			
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	--	--	2.98 U	3 U	3.01 U	NA	NA	NA	2.95 U
2-Methylnaphthalene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	--	--	0.992 U	1 U	1 U	NA	NA	NA	0.984 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	0.992 U	1 U	1 U	NA	NA	NA	0.984 U
bis(2-Ethylhexyl)phthalate	3.0	8000	79000	--	--	2.2	--	--	2.2	--	--	--	0.992 U	1 U	1 U	NA	NA	NA	0.984 U
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	0.992 U	1 U	1 U	NA	NA	NA	0.984 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	0.992 U	1 U	1 U	NA	NA	NA	0.984 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	--	0.992 U	1 U	1 U	NA	NA	NA	0.984 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	0.992 U	1 U	1 U	NA	NA	NA	0.984 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	1.86	1.5	1 U	NA	NA	NA	3.38
Pentachlorophenol	15	--	1800	19 (c)	16 (c)	3.0	19	15	3.0	--	--	--	634	130	84.7	NA	NA	NA	206
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	--	--	0.992 U	1 U	1 U	NA	NA	NA	0.984 U
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	--	--	1.98 U	2 U	2.01 U	NA	NA	NA	1.97 U
EPA Method SW8270SIM																			
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	NA	NA	NA	280	300	56.4	NA
PAHs (µg/L)																			
EPA Method SW8270 - SIM																			
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	NA	NA	NA	NA	NA	NA	NA
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	--	--	NA	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	--	NA	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	--	NA	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Fluoranthene	6.16	--	--	3460 (a)	--	140	--	--	140	--	--	--	NA	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	NA	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	NA	NA	NA	NA	NA	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	--	NA	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	--	--	27.3	54.2 J	13.2	NA	NA	NA	109
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1420	--	--	3.24	7.29 J	1 U	NA	NA	NA	32
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	--	1 U	1.42 J	1 U	NA	NA	NA	4.03
Benzene	130	--	200,000	8900 (a)	--	51 (g)	--	--	51	1700	13,000	--	0.3 U	0.3 U	0.3 U	NA	NA	NA	0.9 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	1 U	1.18 J	1 U	NA	NA	NA	3.06
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	--	--	1.23	1.62 J	1.4	NA	NA	NA	10.6
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	2 U	2 U	2 U	NA	NA	NA	2 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	650,000	--	1 U	1 U	1 U	NA	NA	NA	1 U
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1 U	1.25 J	1 U	NA	NA	NA	3.89
o-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1.85	3.26 J	1 U	NA	NA	NA	19.6
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	4.59	4.89 J	1 U	NA	NA	NA	6.04
p-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	2.79	3.76 J	1 U	NA	NA	NA	12.3
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1.4	3.37 J	1 U	NA	NA	NA	20.1
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	NA	NA	NA	2.14
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	1 U	1 U	1 U	NA	NA	NA	1 U

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**TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI**

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	OX7S	OX7S	OX7S	OX8S	Y	OX8S	OX8S
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406074-07	0408026-08	0411066-06	0402086-04	Dup of OX8S	0402086-04	0406074-08
													6/10/2004	8/4/2004	11/11/2004	10/22/2003	FY72E	FY72D	2/18/2004
HYDROCARBONS (mg/L)																			
NWTPH-HCID																			
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	---	---	---	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx																			
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	---	---	---	NA	NA	NA	NA	NA	NA	NA
NWTPH-G																			
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/L)																			
Arsenic (7080)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.0105	0.014	0.0178	NA	NA	NA	0.0121
Chromium (6010)	0.011 (k)	--	26 (k)	0.29 (i)	0.068 (i)	3433	0.67	0.074	--	--	---	0.005	0.0162	0.0139	0.005 U	NA	NA	NA	0.0143
Copper (6010)	0.009	341	53	0.05 (i)	0.011 (i)	--	0.013	0.009	--	--	---	0.004	0.0001 U	0.0001 U	0.01 U	NA	NA	NA	0.01 U
Lead (7421)	0.0025 (*)	28	323	0.043 (i)	0.0007 (i) (*)	--	0.065	0.0025 (*)	--	--	---	0.02	0.0001 U	0.0001 U	0.001	NA	NA	NA	0.0001 U
Nickel (6010)	0.052	562	38	0.33 (i)	0.052 (i)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	0.169	NA	NA	NA	0.005 U
Zinc (6010)	0.120	105	1230	0.1 (i)	0.1 (i)	26	0.12	0.12	26	--	---	0.015	0.01 U	0.01 U	0.0295	NA	NA	NA	0.01 U
BETX (µg/L)																			
EPA Method SW8021B																			
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (i)	32000 (a)	--	2100	--	--	28,000	110,000	---	--	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	--	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (i)	--	--	--	--	--	--	22,000	---	--	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																			
EPA Method SW8290																			
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	0.0007	NA	NA	NA

TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification Laboratory Identification Date Collected	SCREENING CRITERIA											PH II	PH II	PH II	PH II		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	OX8S	OX8S	OX9S	Q	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0408026-09	0411066-06	0408035-02	0408056-05	
													8/4/2004	11/11/2004	8/5/2004	8/9/2004	
SEMIVOLATILES (µg/L)																	
EPA Method SW8270																	
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	--	--	3 U	2.89 U	3 U	3.09 U	
2-Methylnaphthalene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	--	--	1 U	0.964 U	1 U	19.8	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	1 U	0.964 U	1 U	6.46	
bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	--	--	1 U	0.964 U	1 U	1.03 U	
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	1 U	0.964 U	1 U	1.03 U	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	1 U	0.964 U	1 U	3.79	
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	--	1 U	0.964 U	1 U	1.03 U	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	1 U	0.964 U	1 U	4.97	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	1.09	0.964 U	1 U	1.03 U	
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	76.8	85	5 U	5.15 U	
Phenanthrene	6.3	--	284,000 (b)	--	--	--	--	--	--	--	--	--	1 U	0.964 U	1 U	1.08	
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	--	--	2 U	1.03 U	2 U	10.7	
EPA Method SW8270SIM																	
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	NA	NA	NA	NA	
PAHs (µg/L)																	
EPA Method SW8270 - SIM																	
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	
Acenaphthene	520	--	284,000	1700 (a)	520 (a)	990	--	--	990	--	--	--	NA	NA	NA	5.04	
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	0.239	
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	--	--	NA	NA	NA	0.259	
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	--	NA	NA	NA	0.0498 U	
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	--	NA	NA	NA	0.0498 U	
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	0.0498 U	
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	0.0498 U	
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	0.0498 U	
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	0.0498 U	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	
Fluoranthene	6.16	--	--	3860 (a)	--	140	--	--	140	--	--	--	NA	NA	NA	0.488	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	NA	NA	NA	3.61	
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	NA	NA	NA	0.0498 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	NA	NA	NA	0.398	
Phenanthrene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	--	--	NA	NA	NA	0.716	
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	--	NA	NA	NA	0.179	
VOLATILES (µg/L)																	
EPA Method SW8260																	
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	--	--	101 J	107	1 U	3.47	
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	--	--	33.6 J	8.28	1 U	3.73	
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	--	4.85 J	1.55	1 U	1 U	
Benzene	130	--	200,000	3360 (a)	--	51 (g)	--	--	51	1700	13,000	--	0.3 U	0.3 U	0.3 U	1030	
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	4.15 J	6	1 U	12.1	
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	--	--	12.4 J	11.8	1 U	78.4	
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	2.84 J	2.19	2 U	27.4	
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	580,000	--	1 U	1 U	1 U	1 U	
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	4.94 J	2.13	1 U	9.01	
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	15.3 J	14.8	1 U	116	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	6.53 J	1 U	1 U	1 U	
O-Xylene	1.8	--	8000 (i)	--	--	--	--	--	--	22000 (j)	--	--	18.8 J	20.1	1 U	8.47	
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	19.2 J	10.1	1 U	8.61	
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	2.12 J	1.53	1 U	1 U	
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	1 U	1 U	1 U	21.2	

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TABLE D-1
SUMMARY OF DETECTED ANALYTICAL RESULTS
UPPER ZONE GROUNDWATER SAMPLES
PHASE III RI

												PH II	PH II	PH II	PH II	
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											OX8S 0408026-09 8/4/2004	OX8S 0411066-06 11/11/2004	OX8S 0408035-02 8/5/2004	Q 0408056-05 8/9/2004	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration						Site-Specific Background
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational					
HYDROCARBONS (mg/L)																
NWTPH-HCID																
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA
NWTPH-Dx																
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	5.56
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	0.495 U
NWTPH-G																
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	2.88
PRIORITY POLLUTANT																
METALS (mg/L)																
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.0233	0.0259	0.0044	0.034
Chromium (6010)	0.011 (k)	--	26 (k)	0.29 (l)	0.054 (l)	3433	0.57	0.074	--	--	---	0.005	0.0123	0.0135	0.0156	0.017
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.01 U	0.01 U	0.01 U
Lead (7420)	0.0025 (f)	28	323	0.043 (l)	0.0007 (l) (*)	--	0.065	0.0025 (f)	--	--	---	0.02	0.0001 U	0.00104	0.0001 U	0.00735
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.0818	0.005 U	0.005 U
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.01 U	0.0139	0.01 U	0.01 U
BETX (µg/L)																
EPA Method SW8021B																
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (f)	35000 (u)	--	2100	--	--	29,000	110,000	--	--	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (c)	--	--	--	--	--	--	22,000	--	--	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																
EPA Method SW8290																
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	G1A	G1A	G1A	G1A	G1A	LW4D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		FY82N	0402105-04	0406039-03	0408044-06	0411051-06	FY82L
													10/24/2003	2/20/2004	6/7/2004	8/6/2004	11/9/2004	10/24/2003
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	--	---	3 U	3.08 U	3.19 U	3 U	3.02 U	3 U
2-Methylnaphthalene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	--	---	1 U	1.03 U	1.06 U	1 U	1.01 U	1 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	---	1 U	1.03 U	1.06 U	1 U	1.01 U	1 U
bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	--	---	1 U	1.03 U	1.06 U	1 U	1.01 U	1 U
Carbazole	--	--	--	--	--	--	--	--	--	--	--	---	1 U	1.03 U	1.06 U	1 U	1.01 U	1 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	---	1 U	1.03 U	1.06 U	1 U	1.01 U	1 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	---	1 U	1.03 U	1.06 U	1 U	1.01 U	1 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	---	1 U	1.03 U	1.06 U	1 U	1.01 U	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	1 U	1.03 U	1.06 U	1 U	1.01 U	1 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	---	5 U	5.14 U	5.32 U	5.22	5.64 U	3 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	--	---	1 U	1.03 U	1.06 U	1 U	1.01 U	1 U
Phenol	110	--	--	10200 (a)	2560 (a)	1,750,000	--	--	--	--	--	---	2 U	2.06 U	2.33 U	2 U	2.01 U	2 U
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	---	0.5 U	0.478 U	0.507 U	NA	0.478 U	0.5 U
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	---	NA	NA	NA	NA	NA	NA
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA
Anthracene	19	--	--	--	--	40,000	--	--	40,000	--	--	---	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	---	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	---	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	--	---	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	---	NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	---	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA
Fluoranthene	6.16	--	--	3900 (a)	--	140	--	--	140	--	--	---	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	---	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	---	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	NA	NA	NA	NA	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	---	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	--	---	1 U	1 U	1 U	1 U	1 U	1.4
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	--	---	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	---	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200,000	3300 (a)	--	51 (g)	--	--	51	1200	13,000	---	1 U	0.4 U	0.3 U	0.3 U	0.3 U	1 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	23,000	110,000	--	---	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	--	---	150	67.2	106	118	86.6	1.9
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	---	1 U	2 U	2 U	2 U	2 U	1 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	NA	1 U	1 U	1 U	1 U	NA
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	---	10	4.23	15	8.97	14	1 U
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	---	130	57.1	112	99.6	114	1.6
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	5 U	1 U	1 U	2.49	1 U	5 U
o-Xylene	1.8	--	8000 (f)	--	--	--	--	--	--	22000 (i)	--	---	1 U	1 U	1 U	1 U	1.4	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	---	17	7.93	27.5	16.8	24.5	1 U
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	---	3.5	1 U	5.1	2.94	3.88	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	76,000	--	---	1 U	1 U	1 U	1 U	1 U	1 U

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	G1A FY82N	G1A 0402105-04	G1A 0406039-03	G1A 0408044-06	G1A 0411051-06	LW4D FY82L
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		10/24/2003	2/20/2004	6/7/2004	8/6/2004	11/9/2004	10/24/2003
HYDROCARBONS (mg/L)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
NWTPH-Dx																		
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	2.2	2.39 U	3.98	3.25	3.13	1.6
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.5 U	0.491 U	0.536 U	0.507 U	0.502 U	0.5 U
NWTPH-G																		
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/L)																		
Arsenic (7062)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.035	0.0324	0.0326	0.0293	0.0295	0.028
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (i)	0.055 (i)	3433	0.57	0.074	--	--	---	0.005	0.01	0.0077	0.0155	0.0156	0.0203	0.009
Copper (6010)	0.009	341	53	0.05 (i)	0.011 (i)	--	0.013	0.009	--	--	---	0.004	0.007	0.0346	0.01 U	0.01 U	0.01 U	0.006
Lead (7421)	0.0025 (*)	28	323	0.043 (i)	0.0007 (i) (j)	--	0.068	0.0029 (i)	--	--	---	0.02	0.003	0.00043	0.000437	0.000658	0.00395	0.001 U
Nickel (6010)	0.052	562	38	0.33 (i)	0.052 (i)	4.6	0.47	0.052	4.6	--	---	0.01	0.08	0.0997	0.0955	0.13	0.13	0.01 U
Zinc (6010)	0.120	105	130	0.1 (i)	0.1 (i)	26	0.12	0.12	26	--	---	0.015	0.021	0.01 U	0.0102	0.01 U	0.0243	0.017
BETX (µg/L)																		
EPA Method SW8021B																		
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (b)	32000 (a)	--	2100	--	--	29000	110000	--	--	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15000	--	--	200000	78000	--	--	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (b)	--	80000 (b)	--	--	--	--	--	--	24000	--	--	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																		
EPA Method SW8290																		
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA												MTF	MTF	MTF	MTF	MTF		
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW4D	LW4DR	LW6D	LW6D	LW6D	LW6D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0402113-08 2/23/2004	0411151-01 11/23/2004	FY820 10/24/2003	0402105-05 2/20/2004	0406039-01 6/7/2004	0408044-07 8/6/2004
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	2.89 U	2.98 U	3.1 U	2.88 U	2.99 U	3 U
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	11.7	0.994 U	1 U	0.961 U	0.998 U	1 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.964 U	0.994 U	1 U	0.961 U	0.998 U	1 U
bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	---	---	0.964 U	2.63	1 U	0.961 U	0.998 U	1 U
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	0.964 U	0.994 U	1 U	0.961 U	0.998 U	1 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	0.964 U	0.994 U	1 U	0.961 U	0.998 U	1 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	0.964 U	0.994 U	1 U	0.961 U	0.998 U	1 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.964 U	0.994 U	1 U	0.961 U	0.998 U	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	5300	680	---	---	0.964 U	0.994 U	1 U	0.961 U	0.998 U	1 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	4.12	0.994 U	1 U	0.961 U	0.998 U	1 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	8.95	4.97 U	5.1 U	4.8 U	4.99 U	5 U
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	0.964 U	0.994 U	1 U	0.961 U	0.998 U	1 U
											---	---	1.93 U	1.99 U	2 U	1.92 U	2 U	2 U
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	1.08	1.1	0.483 U	0.498 U	0.5 U
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Fluoranthene	6.16	--	--	3880 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1.9	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	---	0.4 U	0.32	1 U	0.4 U	0.3 U	0.3 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	2.46	1.51	4.2	3.43	2.05	2.11
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	2 U	2 U	1 U	2 U	2 U	2 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	1 U	1 U	NA	1 U	1 U	1 U
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	4.29	5 U	1 U	1 U	1 U
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	2.1	1.27	1 U	1.29
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	2.9	1 U	1.76	2.09
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW4D	LW4DR	LW6D	LW6D	LW6D	LW6D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0402113-08	0411151-01	FY820	0402105-05	0406039-01	0406044-07
													2/23/2004	11/29/2004	10/24/2003	2/20/2004	6/7/2004	8/6/2004
HYDROCARBONS (mg/L)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
NWTPH-Dx																		
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	1	0.353	1.1	1.36 J	1.9	2.05
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.504 U	0.529	0.6 U	0.491 U	0.51 U	0.474 U
NWTPH-G																		
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/L)																		
Arsenic (7060)	0.15 (l) (*)	18 (l)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.031	0.0101	0.016	0.0154	0.0131	0.0153
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.085 (l)	3433	0.57	0.074	--	--	---	0.005	0.01	0.0076	0.008	0.0101	0.0208	0.0187
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.01 U	0.005	0.01 U	0.01 U	0.01 U
Lead (7421)	0.0025 (t)	28	423	0.043 (l)	0.0007 (l) (*)	--	0.065	0.0025 (t)	--	--	---	0.02	0.00097	0.00202	0.003	0.000873	0.000216	0.000252
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.008	0.01 U	0.005 U	0.005 U	0.005 U
Zinc (6010)	0.120	105	1260	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.01 U	0.13	0.012	0.01 U	0.01 U	0.01 U
BETX (µg/L)																		
EPA Method SW8021B																		
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (b)	34000 (a)	--	2100	--	--	29,000	110,000	--	--	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	--	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (b)	--	--	--	--	--	--	22,000	---	--	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																		
EPA Method SW8290																		
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW6D	LW9D	LW9D	LW9D	LW9D	LW9D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0411051-07	FY82M	0402105-06	0406039-02	0408044-05	0411051-02
													11/9/2004	10/24/2003	2/20/2004	6/7/2004	8/6/2004	11/9/2004
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	3.12 U	3.1 U	2.87 U	3.41 U	3 U	3.01 U
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	1.04 U	1 U	0.958 U	1.14 U	1 U	1 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1.04 U	1 U	0.958 U	1.14 U	1 U	1 U
Di(2-Ethylhexyl)phthalate	3.0	8000	79000	--	--	2.2	--	--	2.2	--	---	---	1.04 U	1 U	0.958 U	1.14 U	1 U	1 U
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1.04 U	1 U	0.958 U	1.14 U	1 U	1 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	1.04 U	1 U	0.958 U	1.14 U	1 U	1 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	1.04 U	1 U	0.958 U	1.14 U	1 U	1 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	1.04 U	1 U	0.958 U	1.14 U	1 U	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1.04 U	1 U	0.958 U	1.14 U	1 U	1 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	0.495 U	0.51 U	0.495 U	0.494 U	0.5 U	0.504 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1.04 U	1 U	0.958 U	1.14 U	1 U	1 U
Phenol	110	--	--	10200 (a)	2580 (a)	1,700,000	--	--	--	--	---	---	2.08 U	2 U	1.82 U	2.27 U	2 U	2 U
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	0.495 U	0.51 U	0.495 U	0.494 U	0.5 U	0.504 U
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6.16 (c)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Fluoranthene	6.16	--	--	9980 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200000 (e)	5300 (a)	--	51 (g)	--	--	51	1700	13,300	---	0.3 U	1 U	0.4 U	0.3 U	0.3 U	0.3 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	2.39	12	4.36	1 U	17.8	1.74
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	2 U	1 U	2 U	2 U	2 U	2 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	1 U	NA	1 U	1 U	1 U	1 U
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	5.4	1.16	1 U	8.72	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	5 U	1 U	1 U	1 U	1 U
p-Xylene	1.8	--	8000 (f)	--	--	--	--	--	--	22000 (i)	---	---	1.38	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1.09	1.3	1 U	1 U	1.03	1 U
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	3.23	1 U	1 U	1 U	1 U	1.03
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA												MTF	MTF	MTF	MTF	MTF	MTF													
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW6D	LW9D	LW9D	LW9D	LW9D	LW9D												
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0411051-07	FY82M	0402105-08	0406039-02	0408044-05	0411051-02												
													11/9/2004	10/24/2003	2/20/2004	6/7/2004	8/6/2004	11/9/2004												
HYDROCARBONS (mg/L)																														
NWTPH-HCID																														
Gasoline												--	--	--	--	--	--	NA	NA	NA	NA	NA								
Diesel												--	--	--	--	--	--	NA	NA	NA	NA	NA								
NWTPH-Dx																														
TPH-Diesel Range												--	--	--	--	--	--	1.9	0.25 U	0.246 UJ	0.246 U	0.254 U	0.269							
TPH-Motor Oil Range												--	--	--	--	--	--	0.508 U	0.5 U	0.492 UJ	0.492 U	0.508 U	0.514 U							
NWTPH-G																														
TPH-Gasoline Range												--	--	--	--	--	--	12	--	--	NA	NA	NA	NA						
PRIORITY POLLUTANT METALS (mg/L)																														
Arsenic (7060)												0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	--	1.5	0.014	0.038	0.0301	0.0272	0.0307	0.0458	
Chromium (6010)												0.011 (k)	--	25 (k)	0.29 (i)	0.065 (i)	3433	0.57	0.074	--	--	0.005	0.0182	0.012	0.0101	0.0173	0.0175	0.0182		
Copper (6010)												0.009	341	53	0.05 (i)	0.011 (i)	--	0.013	0.009	--	--	0.004	0.01 U	0.011	0.01 U	0.01 U	0.01 U	0.01 U		
Lead (7421)												0.0025 (*)	28	323	0.043 (i)	0.0007 (i) (*)	--	0.065	0.0025 (*)	--	--	0.02	0.00042	0.002	0.000686	0.000597	0.000788	0.000788	0.00068	
Nickel (6010)												0.052	562	38	0.33 (i)	0.052 (i)	4.6	0.47	0.052	4.6	--	--	0.01	0.005 U	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	
Zinc (6010)												0.120	105	1230	0.1 (i)	0.1 (i)	26	0.12	0.12	26	--	--	0.015	0.01 U	0.027	0.01 U	0.01 U	0.01 U	0.01 U	0.012 U
BETX (µg/L)																														
EPA Method SW8021B																														
Benzene												130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	
Ethylbenzene												7.3	--	200000 (f)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	NA	NA	NA	NA	NA	NA	
Toluene												9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	75,000	--	--	NA	NA	NA	NA	NA	NA	
Xylenes, Total												13 (h)	--	8900 (h)	--	--	--	--	--	--	23,000	--	--	NA	NA	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																														
EPA Method SW8290																														
Total TEQ												--	--	--	--	--	5.1E-06	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

											MTF	MTF	MTF	MTF	MTF	MTF						
SCREENING CRITERIA																						
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW14D	LW14D	LW14D	LW16D	LW17D	LW17D				
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		FY82C	0402113-03	0409036-05	0409036-04	FY82G	0402105-06				
													10/23/2003	2/23/2004	8/5/2004	8/5/2004	10/23/2003	2/20/2004				
SEMIVOLATILES (µg/L)																						
EPA Method SW8270																						
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	NA	NA	NA	NA	NA	NA				
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA				
Bis(2-Ethylhexyl)phthalate	3.0	8000	75000	--	--	2.2	--	--	2.2	--	---	---	NA	NA	NA	NA	NA	NA				
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	NA	NA	NA	NA	NA	NA				
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA				
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	NA				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA				
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
EPA Method SW8270SIM																						
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	0.5 U	0.557 U	0.5 U	0.5 U	0.51 U	0.497 U				
PAHs (µg/L)																						
EPA Method SW8270 - SIM																						
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA				
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Anthracene	19	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	NA				
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	NA				
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	NA	NA	NA	NA	NA	NA				
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA				
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA				
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA				
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Fluoranthene	6.16	--	--	9900 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	NA				
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA				
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA				
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	NA				
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	NA				
VOLATILES (µg/L)																						
EPA Method SW8260																						
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	NA	NA	NA	NA	NA	NA				
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	NA	NA	NA	NA	NA	NA				
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Benzene	130	--	200,000 (e)	32000 (a)	--	51 (g)	--	--	51	1700	13,000	---	NA	NA	NA	NA	NA	NA				
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	NA	NA	NA	NA	NA	NA				
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	NA	NA	NA	NA	NA	NA				
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	650,000	---	NA	NA	NA	NA	NA	NA				
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	NA				
p-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	NA	NA	NA	NA	NA	NA				
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA				
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	NA	NA	NA	NA	NA	NA				

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Landau Associates

BZTO104(e)023559

**TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI**

												MTF	MTF	MTF	MTF	MTF	MTF		
Sample Identification: Laboratory Identification Date Collected:		SCREENING CRITERIA																	
		Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW14D FY82C	LW14D 0402113-03	LW14D 0408036-05	LW16D 0408036-04	LW17D FY82G	LW17D 0402105-06
		Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		10/23/2003	2/23/2004	8/5/2004	8/5/2004	10/23/2003	2/20/2004
HYDROCARBONS (mg/L)																			
NWTPH-HCID																			
Gasoline		--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA
Diesel		--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx																			
TPH-Diesel Range		--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
TPH-Motor Oil Range		--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA
NWTPH-G																			
TPH-Gasoline Range		--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/L)																			
Arsenic (7060)		0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	NA	NA	NA	NA	NA	NA
Chromium (6010)		0.011 (k)	25 (k)	53	0.29 (l)	0.055 (l)	3434	0.57	0.074	---	---	---	0.005	NA	NA	NA	NA	NA	NA
Copper (6010)		0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	---	---	---	0.004	NA	NA	NA	NA	NA	NA
Lead (7421)		0.0025 (*)	363	363	0.049 (l)	0.0007 (j) (*)	--	0.065	0.0025 (l)	---	---	---	0.02	NA	NA	NA	NA	NA	NA
Nickel (6010)		0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	NA	NA	NA	NA	NA	NA
Zinc (6010)		0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	NA	NA	NA	NA	NA	NA
BETX (µg/L)																			
EPA Method SW8021B																			
Benzene		130	--	200000	5300 (a)	--	51 (g)	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene		7.3	--	200000 (f)	3200 (d)	--	2100	--	28000	170000	--	---	NA	NA	NA	NA	NA	NA	NA
Toluene		9.8	--	104000	17500 (a)	--	15,000	--	200,000	76,000	---	---	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total		13 (h)	--	8000 (f)	--	--	--	--	--	22,000	--	---	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																			
EPA Method SW8290																			
Total TEQ		--	--	--	--	--	5.1E-06	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	MTF		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW17D	LW17D	LW18D	LW18D	LW18D	LW18D	LW20D	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0408044-08	0411051-08	FY82F	0402105-07	0408044-04	0411051-05	FZ04N	
													8/6/2004	11/9/2004	10/23/2003	2/23/2004	8/6/2004	11/9/2004	10/28/2003	
SEMIVOLATILES (µg/L)																				
EPA Method SW8270																				
2,4-Dimethylphenol	42	--	--	2120 (a)	--	650	--	--	850	--	---	---	NA	NA	NA	NA	NA	NA	3 U	
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	1 U	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA	1 U	
bis(2-Ethylhexyl)phthalate	3.0	8000	79000	--	--	2.2	--	--	2.2	--	---	---	NA	NA	NA	NA	NA	NA	3.9	
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	1 U	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	1 U	
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	NA	NA	NA	NA	NA	NA	1 U	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA	1 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	NA	NA	NA	NA	NA	NA	1 U	
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	--	15	3.0	--	---	NA	NA	NA	NA	NA	NA	5 U	
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	1 U	
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	2 U	
EPA Method SW8270SIM																				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	--	15	3.0	--	---	0.5 U	0.495 U	0.58	0.488 U	0.5 U	0.5 U	NA	
PAHs (µg/L)																				
EPA Method SW8270 - SIM																				
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Anthracene	13	--	--	--	--	20,000	--	--	20,000	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	---	NA	NA	NA	NA	NA	NA	0.1 U	
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	---	NA	NA	NA	NA	NA	NA	0.1 U	
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Fluoranthene	6.16	--	--	3980 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	NA	NA	NA	NA	NA	NA	0.1 U	
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	NA	0.1 U	
VOLATILES (µg/L)																				
EPA Method SW8260																				
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	--	---	NA	NA	NA	NA	NA	NA	1 U	
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1900	--	---	NA	NA	NA	NA	NA	NA	1 U	
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA	1 U	
Benzene	130	--	200,000 (e)	5300 (a)	--	51 (g)	--	--	51	1700	13,000	--	NA	NA	NA	NA	NA	NA	1 U	
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	--	---	NA	NA	NA	NA	NA	NA	1 U	
Isopropylbenzene	130	--	200,000 (e)	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA	1 U	
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	---	NA	NA	NA	NA	NA	NA	1 U	
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	--	NA	NA	NA	NA	NA	NA	1.5	
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA	1 U	
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA	1 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	NA	NA	NA	NA	NA	NA	5 U	
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22,000 (i)	--	---	NA	NA	NA	NA	NA	NA	1 U	
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA	1 U	
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	---	NA	NA	NA	NA	NA	NA	1 U	
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	---	NA	NA	NA	NA	NA	NA	1 U	

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**TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI**

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	MTF		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW17D	LW17D	LW18D	LW18D	LW18D	LW18D	LW20D	
	Aquatic	Birds	Mammals	Fresh Aquatic	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0408044-08	0411051-08	FY82F	0402105-07	0408044-04	0411051-05	FZ04N	
													8/6/2004	11/9/2004	10/23/2003	2/20/2004	8/6/2004	11/9/2004	10/28/2003	
HYDROCARBONS (mg/L)																				
NWTPH-HCID																				
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	---	---	---	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx																				
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	---	---	---	NA	2.74	NA	NA	NA	2.32	0.4	
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	---	---	---	NA	0.489 U	NA	NA	NA	0.491 U	0.6 U	
NWTPH-G																				
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	3.83	NA	NA	NA	1.79	0.25 U	
PRIORITY POLLUTANT METALS (mg/L)																				
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	NA	NA	NA	NA	NA	NA	0.021	
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (j)	0.085 (j)	5495	0.57	0.074	--	--	---	0.065	NA	NA	NA	NA	NA	NA	0.005 U	
Copper (6010)	0.009	341	53	0.05 (j)	0.011 (j)	--	0.013	0.009	--	--	---	0.004	NA	NA	NA	NA	NA	NA	0.004	
Lead (7221)	0.0025 (*)	26	323	0.043 (j)	0.0007 (j) (*)	--	0.065	0.0025 (*)	--	--	---	0.02	NA	NA	NA	NA	NA	NA	0.001 U	
Nickel (6010)	0.052	562	38	0.33 (j)	0.052 (j)	4.6	0.47	0.052	4.6	--	---	0.01	NA	NA	NA	NA	NA	NA	0.01 U	
Zinc (6010)	0.120	105	1230	0.1 (j)	0.1 (j)	26	0.12	0.12	26	--	---	0.015	NA	NA	NA	NA	NA	NA	0.015	
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	7.3	--	200000 (b)	32000 (a)	--	2100	--	--	29,000	110,000	---	--	NA	NA	NA	NA	NA	NA	NA	
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	--	NA	NA	NA	NA	NA	NA	NA	
Xylenes, Total	13 (b)	--	8000 (b)	--	--	--	--	--	--	22,000	---	--	NA	NA	NA	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

											MTF	MTF	MTF	MTF	MTF			
											SCREENING CRITERIA							
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW20D	LW20D	LW20D	LW20D	LW22D	LW22D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0402115-03 2/24/2004	0408050-10 6/8/2004	0408056-10 8/9/2004	0411059-03 11/10/2004	F204A 10/27/2003	0402115-10 2/24/2004
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	3.07 U	3.12 U	3.19 U	2.85 U	4.2 U	3.08 U
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	1.02 U	1.04 U	1.06 U	0.95 U	1.4 U	1.03 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1.02 U	1.04 U	1.06 U	0.95 U	1.4 U	1.03 U
Bis(2-Ethylhexyl)phthalate	3.0	8000	23000	--	--	2.2	--	--	2.2	--	---	---	1.02 U	1.04 U	1.06 U	0.95 U	1.4 U	1.03 U
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1.02 U	1.04 U	1.06 U	0.95 U	1.4 U	1.03 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	1.02 U	1.04 U	1.06 U	0.95 U	1.4 U	1.03 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	1.02 U	1.04 U	1.06 U	0.95 U	1.4 U	1.03 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	1.02 U	1.04 U	1.06 U	0.95 U	1.4 U	1.03 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1.02 U	1.04 U	1.06 U	0.95 U	1.4 U	1.03 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	5.12 U	5.19 U	5.31 U	4.75 U	7.0 U	5.18 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1.02 U	1.04 U	1.06 U	0.95 U	1.4 U	1.03 U
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	2.05 U	2.08 U	2.13 U	1.9 U	4.1	2.05 U
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	0.14 U	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Anthracene	13	--	--	--	--	40,000	--	--	40,000	9.1	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.69	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	0.14 U	NA
Fluoranthene	6.16	--	--	3880 (a)	--	140	--	--	140	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.078	0.17	0.0602	0.0476 U	0.35	0.0523 U
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.0557 U	0.06	0.1	0.0476 U	0.14 U	0.0523 U
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	0.0557 U	0.05 U	0.0502 U	0.0476 U	0.14 U	0.0523 U
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	---	0.4 U	0.3 U	0.3 U	0.3 U	2.9	0.4 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	14	1 U
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	2 U	2 U	2 U	2 U	1.6	2 U
Methyltert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	650,000	---	1 U	1 U	1 U	1 U	1.9 M	1 U
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	12	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	1 U	1 U	1 U	5 U	1 U
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1.5	1 U
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1.6	1 U

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

												MTF		MTF		MTF		MTF		MTF	
												SCREENING CRITERIA									
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW20D	LW20D	LW20D	LW20D	LW22D	LW22D			
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0402115-03 2/24/2004	0406050-10 6/8/2004	0408056-10 8/9/2004	0411059-03 11/10/2004	FZ04A 10/27/2003	0402115-10 2/24/2004			
HYDROCARBONS (mg/L)																					
NWTPH-HCID																					
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA			
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA			
NWTPH-Dx																					
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	0.369	0.573	0.737	0.552	2	0.429			
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.492 U	0.504 U	0.506 U	0.665	0.5 U	0.497 U			
NWTPH-G																					
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	0.100 U	0.100 U	0.229	0.100 U	0.54	0.100 U			
PRIORITY POLLUTANT METALS (mg/L)																					
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.0287	0.0268	0.0286	0.0297	0.023	0.0386			
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.060 (l)	3439	0.57	0.074	--	---	---	0.006	0.0206	0.0198	0.0271	0.022	0.15	0.0195			
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	---	---	0.004	0.01 U	0.01 U	0.0957	0.0113	0.198	0.0114			
Lead (7421)	0.0025 (*)	28	323	0.043 (l)	0.0007 (l) (*)	--	0.065	0.0025 (l)	--	---	---	0.02	0.00196	0.00139	0.00305	0.00188	0.056	0.00973			
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	0.005 U	0.005 U	0.14	0.005 U			
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.016	0.0113	0.0167	0.0674	0.0238	0.4	0.0361			
BETX (µg/L)																					
EPA Method SW8021B																					
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA			
Ethylbenzene	7.3	--	200000 (f)	32000 (a)	--	2100	--	--	29000	110000	--	--	NA	NA	NA	NA	NA	NA			
Toluene	9.8	--	104000	17500 (a)	--	15000	--	--	200000	78000	---	---	NA	NA	NA	NA	NA	NA			
Xylenes, Total	13 (h)	--	8000 (i)	--	--	--	--	--	--	22000	--	---	NA	NA	NA	NA	NA	NA			
DIOXIN/FURANS (ng/L)																					
EPA Method SW8290																					
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA			

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										MTF	MTF	MTF	MTF	MTF	MTF		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW22D	LW22D	LW22D	LW23D	LW23D	LW23D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406040-03	0408056-03	0411059-04	FZ04B	0402115-11	0406040-04
													6/7/2004	8/9/2004	11/10/2004	10/27/2003	2/24/2004	6/7/2004
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	--	--	2.85 U	3.03 U	2.94 U	1 U	3.39 U	2.9 U
2-Methylnaphthalene	520 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	--	0.951 U	1.01 U	0.979 U	6.8	1.13 U	0.968 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	0.951 U	1.01 U	0.979 U	1 U	1.13 U	0.968 U
Bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	--	--	0.951 U	1.01 U	0.979 U	1 U	1.13 U	0.968 U
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	0.951 U	1.01 U	0.979 U	1 U	1.13 U	0.968 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	0.951 U	1.01 U	0.979 U	1 U	1.13 U	0.968 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	--	0.951 U	1.01 U	0.979 U	1 U	1.13 U	0.968 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	0.951 U	1.01 U	0.979 U	2 U	1.13 U	0.968 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	690	--	--	0.951 U	1.01 U	0.979 U	1 U	1.13 U	0.968 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	4.76 U	5.06 U	4.9 U	5 U	5.66 U	4.84 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	--	--	0.951 U	1.01 U	0.979 U	1 U	1.13 U	0.968 U
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	--	--	1.9 U	2.02 U	1.96 U	3 U	2.26 U	1.94 U
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	NA	NA	NA	NA	NA	NA
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	0.1 U	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	0.0482 U	0.052 U	0.052 U	0.61	0.16	0.429
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	--	0.0482 U	0.052 U	0.052 U	0.1 U	0.05 U	0.0683
Anthracene	15	--	--	--	--	40,000	--	--	40,000	--	--	--	0.0482 U	0.052 U	0.052 U	0.11	0.05 U	0.0488 U
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	--	0.0482 U	0.052 U	NA	0.16	0.05 U	0.0488 U
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	--	0.0482 U	0.052 U	0.052 U	0.33	0.05 U	0.0488 U
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	--	--	0.0482 U	0.052 U	0.052 U	0.13	0.05 U	0.0488 U
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	0.0482 U	0.052 U	0.052 U	0.16	0.05 U	0.0488 U
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	0.0482 U	0.052 U	0.052 U	0.15	0.05 U	0.0488 U
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	0.0482 U	0.052 U	0.052 U	0.21	0.05 U	0.0488 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	0.1 U	NA	NA
Fluoranthene	6.16	--	--	3980 (a)	--	140	--	--	140	--	--	--	0.0482 U	0.052 U	0.0624	0.36	0.05 U	0.0488 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	0.0482 U	0.166	0.052 U	0.31	0.06	0.0585
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	0.0482 U	0.052 U	0.052 U	0.12	0.05 U	0.0488 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	690	--	--	0.106	0.052 U	0.052 U	0.1 U	0.09	0.517
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	--	0.0482 U	0.052 U	0.052 U	0.2	0.05 U	0.0585
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	--	0.0482 U	0.052 U	0.0832	0.44	0.05 U	0.0585
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	--	--	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	--	--	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	--	0.3 U	0.3 U	0.3 U	40	22.9	132
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	--	--	13.8	1 U	1.38	16	8.61	13.7
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	2 U	2 U	2 U	1.2	2 U	2 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	560,000	--	1 U	1 U	2.26	33	17.4	51.2
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1.8	1 U	1.4
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	5.58	1 U	1 U	8.6	6.71	6.9
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	690	--	--	1 U	1 U	1 U	5 U	1 U	1 U
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1.26	1 U	1 U	3.3	1.12	2.86
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	1 U	1 U	1 U	1.2	1 U	1 U

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW22D	LW22D	LW22D	LW23D	LW23D	LW23D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406040-03	0408056-03	0411059-04	FZ04B	0402115-11	0406040-04
													6/7/2004	8/9/2004	11/10/2004	10/27/2003	2/24/2004	6/7/2004
HYDROCARBONS (mg/L)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
NWTPH-Dx																		
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	3.43	1.75	1.61	2.9	1.53	4.44
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.499 U	0.498 U	1.28	0.6 U	0.648	0.527 U
NWTPH-G																		
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	0.239	0.100 U	0.100 U	0.88	0.668	0.732
PRIORITY POLLUTANT METALS (mg/L)																		
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g)(*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.0256	0.00774	0.0417	0.021	0.0421	0.0444
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	2433	0.57	0.074	--	--	---	0.005	0.0235	0.0194	0.005 U	0.135	0.0226	0.0248
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.01 U	0.01 U	0.201	0.0197	0.01 U
Lead (7421)	0.0025 (*)	28	323	0.013 (l)	0.0007 (l)(*)	--	0.065	0.0025 (*)	--	--	---	0.02	0.00371	0.00121	0.0028	0.068	0.00854	0.00485
Nickel (6010)	0.052	562	38	0.33 (j)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	0.005 U	0.11	0.005 U	0.005 U
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.0175	0.0123	0.0178	0.348	0.0333	0.024
BETX (µg/L)																		
EPA Method SW8021B																		
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	300000 (f)	32000 (a)	--	2100	--	--	28,000	110,000	--	--	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (f)	--	--	--	--	--	--	22,000	--	---	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																		
EPA Method SW8290																		
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										LW23D 0406056-04 8/9/2004	LW23D 0411065-01 11/11/2004	LW24D FZ04U 10/28/2003	LW24D 0402115-07 2/24/2004	LW24D 0406040-07 6/7/2004	LW24D 0406056-06 8/9/2004	LW24D 0411065-02 11/11/2004
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site- Specific Background					
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational						
SEMIVOLATILES (µg/L)																	
EPA Method SW8270																	
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	3.14 U	3.07 U	1 U	3.22 U	2.85 U
2-Methylnaphthalene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	---	---	1.05 U	1.02 U	5.6	1.07 U	0.95 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1.05 U	1.02 U	1 U	1.37	1.27
Bis(2-Ethylhexyl)phthalate	3.0	8000	78000	--	--	2.2	--	--	2.2	--	---	---	1.05 U	3.52	1 U	1.07 U	1.07
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1.05 U	1.02 U	1 U	1.07 U	0.95 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	5300	--	---	---	1.05 U	1.02 U	3 U	1.07 U	0.95 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	1.05 U	1.02 U	1 U	1.07 U	0.95 U
Fluorene	3.5	--	--	--	--	5300	--	--	5300	--	---	---	1.05 U	1.02 U	2 U	3.55	3.06
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	---	1.05 U	1.02 U	1 U	1.07 U	0.95 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	5.24 U	5.12 U	5 U	5.36 U	4.75 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1.05 U	1.02 U	1 U	2.06	2.13
Phenol	110	--	--	10200 (a)	2560 (e)	1,700,000	--	--	--	--	---	---	2.09 U	2.05 U	3 U	2.14 U	1.9 U
EPA Method SW8270SIM																	
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA
PAHs (µg/L)																	
EPA Method SW8270 - SIM																	
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	0.1 U	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.85	0.696	0.91	1.66	1.21
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	0.123	0.115	0.1 U	0.375	0.303
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	0.0512 U	0.0478 U	0.43	0.135	0.162
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	0.0512 U	NA	0.4	0.052 U	0.0487 U
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	0.0512 U	0.0478 U	0.34	0.052 U	0.0506 U
Benzo(b)fluoranthene	6.15 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0512 U	0.0478 U	0.18	0.052 U	0.0506 U
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	0.0512 U	0.0478 U	0.13	0.052 U	0.0506 U
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0512 U	0.0478 U	0.27	0.052 U	0.0506 U
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0512 U	0.0478 U	0.4	0.052 U	0.0506 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	0.1 U	NA	NA
Fluoranthene	6.16	--	--	3980 (a)	--	140	--	--	140	--	---	---	0.0718	0.0689	0.79	0.177	0.212
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.246	0.277	0.7	3.96	2.81
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0512 U	0.0478 U	0.12	0.052 U	0.0506 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.409	0.526	0.1 U	0.749	0.87
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.102	0.124	1.2	1.86	1.63
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	0.0716	0.0765	0.94	0.166	0.263
VOLATILES (µg/L)																	
EPA Method SW8260																	
1,2,4-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	10,000	---	25.1	12.1	2 U	0.4 U	0.8 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	23,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	11.5	14.5	2.2	7.97	8.96
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	2 U	2 U	1 U	2 U	2 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	850,000	---	3.17	7.93	1 U	1 U	1 U
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1.45	1 U	2.85	3.51
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	5.51	4.79	1 U	12.8	11.5
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	1 U	5 U	1 U	1 U
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	1.22	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1.6	2.08	1.3	4.81	4.84
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U

**TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI**

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	MTF	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW23D	LW23D	LW24D	LW24D	LW24D	LW24D	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		LW23D	LW23D	LW24D	LW24D	LW24D	LW24D	
													0408056-04	0411065-01	FZ04U	0402115-07	0406040-07	0408056-06	0411065-02
													8/9/2004	11/11/2004	10/28/2003	2/24/2004	6/7/2004	8/9/2004	11/11/2004
HYDROCARBONS (mg/L)																			
NWTPH-HCID																			
Gasoline																			
Diesel																			
NWTPH-Dx																			
TPH-Diesel Range																			
TPH-Motor Oil Range																			
NWTPH-G																			
TPH-Gasoline Range																			
PRIORITY POLLUTANT METALS (mg/L)																			
Arsenic (7060)																			
Chromium (6010)																			
Copper (6010)																			
Lead (7421)																			
Nickel (6010)																			
Zinc (6010)																			
BETX (µg/L)																			
EPA Method SW8021B																			
Benzene																			
Ethylbenzene																			
Toluene																			
Xylenes, Total																			
DIOXIN/FURANS (ng/L)																			
EPA Method SW8290																			
Total TEQ																			

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

												MTF	MTF	MTF	MTF	MTF	MTF	MTF		
												SCREENING CRITERIA								
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW25D FZ04V 10/28/2003	LW25D 0402115-08 2/24/2004	LW25D 0406040-08 6/7/2004	LW25D 0408056-07 8/9/2004	LW25D 0411065-03 11/11/2004	LW26D FZ04T 10/28/2003	LW26D 0402115-05 2/24/2004	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational									
SEMIVOLATILES (µg/L)																				
EPA Method SW8270																				
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	--	--	1.2 U	3.2 U	3.06 U	2.99 U	2.95 U	1.1 U	3.33 U	
2-Methylnaphthalene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	--	--	1.2 U	1.07 U	1.02 U	0.986 U	0.984 U	1.1 U	1.11 U	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	1.2 U	1.07 U	1.02 U	1.93	1.4	1.1 U	1.11 U	
bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	--	--	1.2 U	1.07 U	1.02 U	3.53	2.95	5.88	1.1 U	
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	1.4	1.07 U	1.02 U	0.986 U	0.984 U	1.1 U	1.11 U	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	1.2 U	1.07 U	1.02 U	0.986 U	0.984 U	1.1 U	1.11 U	
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	--	1.2 U	1.07 U	1.02 U	0.986 U	0.984 U	1.1 U	1.11 U	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	2.3 U	1.29 U	1.02 U	4.12	2.96	2.2 U	1.11 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	1.2 U	1.07 U	1.02 U	0.986 U	0.984 U	1.1 U	1.11 U	
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	5.8 U	5.34 U	5.11 U	4.98 U	4.92 U	5.5 U	5.56 U	
Phenanthrene	6.3	--	284,000 (b)	--	--	--	--	--	--	--	--	--	1.2 U	1.07 U	1.02 U	2.51	1.88	1.1 U	1.11 U	
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	--	--	3.6 U	2.13 U	2.04 U	1.99 U	1.97 U	3.3 U	2.22 U	
EPA Method SW8270S1M																				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	NA	NA	NA	NA	NA	NA	NA	
PAHs (µg/L)																				
EPA Method SW8270 - SIM																				
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	--	0.12 U	NA	NA	NA	NA	0.11 U	NA	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	0.45	0.639	0.112	1.16	1.13	0.11 U	0.0632	
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	--	0.12 U	0.0771	0.0509 U	0.211	0.262	0.11 U	0.116	
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	--	--	0.12 U	0.0771	0.214	0.288	0.231	0.11 U	0.0527 U	
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	--	0.12 U	0.0551 U	0.102	0.0667	NA	0.11 U	0.0527 U	
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	--	0.12 U	0.0551 U	0.0916	0.0556 U	0.0503 U	0.11 U	0.0527 U	
Benzo(b)fluoranthene	6.16 (c)	--	--	--	--	0.018	--	--	0.018	--	--	--	0.12 U	0.0551 U	0.0814	0.0556 U	0.0503 U	0.11 U	0.0527 U	
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	--	0.12 U	0.0551 U	0.0509 U	0.0565 U	0.0503 U	0.11 U	0.0527 U	
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	0.12 U	0.0551 U	0.0509 U	0.0556 U	0.0503 U	0.11 U	0.0527 U	
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	0.12 U	0.0551 U	0.0712	0.0556 U	0.0503 U	0.11 U	0.0527 U	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	0.12 U	NA	NA	NA	NA	0.11 U	NA	
Fluoranthene	6.16	--	--	3960 (a)	--	140	--	--	140	--	--	--	0.13	0.176	0.387	0.478	0.362	0.11 U	0.0627 U	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	0.57	0.738	0.285	1.98	2.57	0.11 U	0.432	
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	0.12 U	0.0551 U	0.0509 U	0.0556 U	0.0503 U	0.11 U	0.0527 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	0.12 U	0.352	0.397	0.478	0.694	0.11 U	0.0843	
Phenanthrene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	--	--	0.33	0.143	0.234	0.345	1.22	0.11 U	0.0527 U	
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	--	0.16	0.176	0.529	0.4	0.342	0.11 U	0.0527 U	
VOLATILES (µg/L)																				
EPA Method SW8260																				
1,2,4-Trimethylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	1300	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,3,5-Trimethylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	1400	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
4-Isopropyltoluene	9.8 (f)	--	104,000 (f)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Benzene	130	--	200,000	3300 (a)	--	51 (g)	--	--	51	1700	13,000	--	1 U	0.4 U	0.3 U	0.3 U	0.3 U	1 U	0.4 U	
Ethylbenzene	7.3	--	200,000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Isopropylbenzene	130	--	200,000 (e)	--	--	--	--	--	--	--	--	--	5.6	5.01	1.29	17.8	4.09	1 U	1 U	
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22,000 (i)	--	--	1.6	2 U	2 U	2 U	2 U	1 U	2 U	
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	--	1 U	1 U	1 U	1 U	1 U	1.2	1 U	
n-Butylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1.87	1 U	1 U	1 U	
n-Propylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	--	--	--	2	1 U	1 U	5.78	1 U	1 U	1 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	5 U	1 U	1 U	1 U	1 U	5 U	1 U	
p-Xylene	1.6	--	8000 (h)	--	--	--	--	--	--	22,000 (i)	--	--	1 U	1 U	1 U	1 U	1.38	1 U	1 U	
sec-Butylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	--	--	--	1.2	2.43	1.4	4.59	1.77	1 U	1 U	
tert-Butylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	1 U	1 U	1 U	1 U	1 U	1 U	1 U	

7/19/05 \\Edmdata\wproc\231\009\132\Phill RI 071905\Phill RI Rpt_App D Lower GW 1

Landau Associates

BZTO104(e)023569

**TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI**

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	MTF		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW25D FZ04V 10/28/2003	LW25D 0402115-08 2/24/2004	LW25D 0406040-08 6/7/2004	LW25D 0408056-07 8/9/2004	LW25D 0411065-03 11/11/2004	LW26D FZ04T 10/28/2003	LW26D 0402115-05 2/24/2004	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational									
HYDROCARBONS (mg/L)																				
NWTPH-HCID																				
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx																				
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	1.3	6.67	2.31	3.17	2.54	1.1	1.74	
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.5 U	1.32	0.494 U	0.502 U	1.04	0.6 U	0.541	
NWTPH-G																				
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	0.43	0.877	0.409	0.98	1.38	0.35	0.268	
PRIORITY POLLUTANT METALS (mg/L)																				
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.032	0.0261	0.0276	0.0425	0.064	0.007	0.0098	
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	3430	0.57	0.074	--	--	---	0.005	0.31	0.0517	0.0345	0.0161	0.0862	0.012	0.0159	
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.373	0.0441	0.0179	0.01 U	0.0865	0.016	0.01 U	
Lead (7421)	0.0025 (*)	28	323	0.043 (l)	0.0002 (h) (*)	--	0.065	0.0026 (l)	--	--	---	0.02	0.15	0.0233	0.0108	0.00816	0.0658	0.006	0.00272	
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.28	0.0158	0.0084	0.0085	0.0603	0.01	0.005 U	
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.83	0.113	0.0647	0.0831	0.269	0.036	0.0116	
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (f)	32000 (a)	--	2100	--	--	29,000	110,000	---	--	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	--	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8660 (h)	--	--	--	--	--	--	22,000	---	--	NA	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA

BZTO104(e)023570

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

											MTF	MTF	MTF	MTF	MTF	MTF		
SCREENING CRITERIA																		
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW26D	LW26D	LW26D	LW27D	LW27D	LW27D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406040-06 6/7/2004	0408066-01 8/10/2004	0411059-05 11/10/2004	10/29/2003	0402115-06 2/24/2004	0406040-05 6/7/2004
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	--	--	2.92 U	3.01 U	2.92 U	1.1 U	2.98 U	2.97 U
2-Methylnaphthalene	520 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	--	0.972 U	1 U	0.975 U	1.1 U	0.993 U	0.989 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	0.972 U	1 U	0.975 U	1.1 U	0.993 U	0.989 U
Bis(2-Ethylhexyl)phthalate	3.0	8000	75000	--	--	2.2	--	--	2.2	--	--	--	0.972 U	3.77	0.975 U	1.1 U	0.993 U	0.989 U
Carbazole	--	--	--	--	--	--	--	--	--	--	--	--	0.972 U	1 U	0.975 U	1.1 U	0.993 U	0.989 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	0.972 U	1 U	0.975 U	1.1 U	0.993 U	0.989 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	--	0.972 U	1 U	0.975 U	1.1 U	0.993 U	0.989 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	0.972 U	1 U	0.975 U	2.2 U	0.993 U	0.989 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	0.972 U	1 U	0.975 U	1.1 U	0.993 U	0.989 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	4.88 U	5.01 U	4.87 U	5.8 U	4.97 U	4.95 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	--	--	0.972 U	1 U	0.975 U	1.1 U	0.993 U	0.989 U
Phenol	110	--	--	10200 (a)	2550 (a)	1,700,000	--	--	--	--	--	--	1.94 U	2 U	1.95 U	3.2 U	1.90 U	1.98 U
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	--	NA	NA	NA	NA	NA	NA
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	--	NA	NA	NA	0.11 U	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0701 U	0.0671 U
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	--	0.0482 U	0.0498 U	NA	0.11 U	0.0584 U	0.0484 U
Benzo(b)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Benzo(k)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Benzo(a)fluoranthene	--	--	--	--	--	--	--	--	--	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	0.11 U	NA	NA
Fluoranthene	6.16	--	--	3950 (a)	--	140	--	--	140	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	--	0.0482 U	0.129	0.204	0.11 U	0.0584 U	0.0484 U
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.126
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	--	0.0482 U	0.0498 U	0.0509 U	0.11 U	0.0584 U	0.0484 U
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	--	--	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	--	--	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200,000	5900 (a)	--	51 (g)	--	--	51	1700	13,600	--	0.3 U	0.3 U	0.4	1 U	0.430 U	0.3 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	28,000	110,000	--	--	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1	1 U	1 U	1 U
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	2 U	2 U	2 U	1 U	2 U	2 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	--	1 U	2.36	3.32	1 U	1 U	1 U
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	--	1 U	1 U	1 U	5 U	1 U	1 U
p-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	--	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	1 U	1 U	1 U	1 U	1 U	1 U

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

											MTF 04/06/04-06	MTF 04/09/06-01	MTF 04/10/05-05	MTF 04/21/15-06	MTF 04/02/11-05	MTF 04/06/04-05		
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA																	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW26D	LW26D	LW26D	LW27D	LW27D	LW27D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406040-06	0409066-01	0411059-05	FZ04S	0402115-06	0406040-05
													6/7/2004	8/10/2004	11/10/2004	10/28/2003	2/24/2004	9/7/2004
HYDROCARBONS (mg/L)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
NWTPH-Dx																		
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	4.07	1.37	2.18	0.54	0.598	2.43
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.491 U	0.497 U	1.4	0.6 U	0.497 U	0.567 U
NWTPH-G																		
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	0.129	0.202 J	0.211	0.25 U	0.100 U	0.24
PRIORITY POLLUTANT METALS (mg/L)																		
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.00561	0.0112	0.0108	0.006	0.00598	0.0071
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	3433	0.57	0.074	--	--	---	0.005	0.0185	0.0171	0.0212	0.009	0.0181	0.0203
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.0812	0.0132	0.02	0.01 U	0.01 U
Lead (7421)	0.0025 (*)	28	323	0.043 (l)	0.0007 (l) (f)	--	0.065	0.0025 (*)	--	--	---	0.02	0.00213	0.0028	0.00353	0.014	0.00209	0.000552
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	0.005 U	0.01	0.005 U	0.005 U
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.0161	0.0173	0.0276	0.047	0.0145	0.01 U
BETX (µg/L)																		
EPA Method SW8021B																		
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (f)	22000 (a)	--	2100	--	--	--	28000	110,000	--	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (h)	--	--	--	--	--	--	22,000	--	---	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																		
EPA Method SW8290																		
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

											MTF	MTF	MTF	MTF	MTF	MTF	MTF			
SCREENING CRITERIA																				
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW27D	LW27D	LW35D	LW35D	LW35D	LW35D	LW35D	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0408056-11	0411059-06	FZ04K	0402115-09	0408040-02	0408056-02	0411059-07	
													8/9/2004	11/10/2004	10/27/2003	2/24/2004	6/7/2004	8/9/2004	11/10/2004	
SEMIVOLATILES (µg/L)																				
EPA Method SW8270																				
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	3.24 U	2.9 U	1.4 U	2.99 U	3.01 U	2.92 U	3.07 U	
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	1.08 U	0.967 U	2.7 U	0.995 U	1 U	0.975 U	1.02 U	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1.08 U	0.967 U	1.4 U	0.995 U	1 U	0.975 U	1.02 U	
bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	---	---	1.08 U	0.967 U	1.4 U	0.995 U	1 U	0.975 U	2.73 U	
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1.08 U	0.967 U	1.4 U	0.995 U	1 U	0.975 U	1.02 U	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	1.08 U	0.967 U	1.4 U	0.995 U	1 U	0.975 U	1.02 U	
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	1.08 U	0.967 U	1.4 U	0.995 U	1 U	0.975 U	1.02 U	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	1.08 U	0.967 U	2.9 U	0.995 U	1 U	0.975 U	1.02 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1.08 U	0.967 U	1.4 U	0.995 U	1 U	0.975 U	1.02 U	
Pentachlorophenol	15	--	1800	19 (b)	15 (c)	3.0	19	15	3.0	--	---	---	5.39 U	4.84 U	7.1 U	4.98 U	5.02 U	4.87 U	5.12 U	
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1.08 U	0.967 U	1.4 U	0.995 U	1 U	0.975 U	1.02 U	
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	2.18 U	1.93 U	4.3 U	1.99 U	2.01 U	1.98 U	2.05 U	
EPA Method SW8270SIM																				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA	NA	
PAHs (µg/L)																				
EPA Method SW8270 - SIM																				
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	0.14 U	NA	NA	NA	NA	
Acenaphthene	620	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.104	0.0689	0.14 U	0.0509 U	0.0513 U	0.0487 U	0.0503 U	
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.0584	0.0503 U	
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.0487 U	0.0603 U	
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	0.0522 U	NA	0.14 U	0.0509 U	0.0616	0.0487 U	NA	
Benzo(b)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.0487 U	0.181	
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.0487 U	0.171	
Benzo(g,h,i)perylene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.0487 U	0.101	
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.0487 U	0.0603 U	
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.0487 U	0.141	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	0.14 U	NA	NA	NA	NA	
Fluoranthene	6.16	--	--	3880 (a)	--	140	--	--	140	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0719	0.0487 U	0.231	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.146	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.477	0.0503 U	
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.0487 U	0.0804	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.104	0.128	0.14 U	0.0509 U	0.133	0.0487 U	0.0503 U	
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0513 U	0.0487 U	0.101	
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	0.0522 U	0.0492 U	0.14 U	0.0509 U	0.0924	0.0487 U	0.241	
VOLATILES (µg/L)																				
EPA Method SW8260																				
1,2,4-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1460	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	18,000	---	0.9 U	0.8 U	1 U	0.4 U	0.8 U	0.8 U	0.9 U	
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	2.2	2.05	1 U	1 U	1 U	
m,p-Xylene	13 (h)	--	6000 (h)	--	--	--	--	--	--	22000 (i)	---	---	2 U	2 U	1 U	2 U	2 U	2 U	2 U	
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	1 U	3.02	1.5	1 U	1 U	1 U	1 U	
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
p-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	1 U	5 U	1 U	1 U	1 U	1 U	
o-Xylene	1.8	--	8000 (f)	--	--	--	--	--	--	22000 (i)	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	

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Landau Associates

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

												MTF	MTF	MTF	MTF	MTF	MTF	MTF			
SCREENING CRITERIA																					
Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW27D	LW27D	LW35D	LW35D	LW35D	LW35D	LW35D			
			Fish			Fresh		Organism		Construction and Excavation Worker		Volatilization to Outdoor Air Occupational									
			Consumption Only			CMC (Acute)		Only		Worker		Occupational									
Sample Identification:	Laboratory Identification:	Date Collected:	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic														
HYDROCARBONS (mg/L)																					
NWTPH-HCID																					
Gasoline			--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA		
Diesel			--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA		
NWTPH-Dx																					
TPH-Diesel Range			--	--	--	--	--	--	--	--	---	---	1.25	0.969	3.1	0.491	4.13	2.71	1.96		
TPH-Motor Oil Range			--	--	--	--	--	--	--	--	---	---	0.539 U	0.647	0.5 U	0.490 U	0.492 U	0.48 U	1.45		
NWTPH-G																					
TPH-Gasoline Range			--	--	--	--	--	--	--	12	---	---	0.335	0.188	0.25 U	0.100 U	0.102	0.100 U	0.100 U		
PRIORITY POLLUTANT METALS (mg/L)																					
Arsenic (7060)			0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	0.00745	0.00534	0.018	0.00168	0.0038	0.001 U	0.0166	
Chromium (6010)			0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	0.433	0.57	0.074	--	---	0.005	0.0211	0.0177	0.35	0.0165	0.0326	0.0172	0.061	
Copper (6010)			0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	---	0.004	0.0157	0.01 U	0.37	0.01 U	0.0107	0.0241	0.0354	
Lead (7421)			0.0025 (*)	28	323	0.043 (l)	0.0077 (l) (*)	--	0.065	0.0025 (*)	--	---	0.02	0.0019	0.00136	0.12	0.00422	0.00821	0.00314	0.0307	
Nickel (6010)			0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	0.32	0.005 U	0.0114	0.0186	0.0647
Zinc (6010)			0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.0528	0.0173	0.93	0.0129	0.0444	0.0427	0.158
BETX (ug/L)																					
EPA Method SW8021B																					
Benzene			130	--	200000	5300 (a)	--	51 (g)	--	51	1700	13000	NA	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene			7.3	--	200000 (f)	32000 (a)	--	2100	--	29000	110000	--	NA	NA	NA	NA	NA	NA	NA	NA	
Toluene			9.8	--	104000	17500 (a)	--	15,000	--	200,000	78,000	---	NA	NA	NA	NA	NA	NA	NA	NA	
Xylenes Total			13 (h)	--	8680 (h)	--	--	--	--	--	22,000	--	NA	NA	NA	NA	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																					
EPA Method SW8290																					
Total TEQ			--	--	--	--	--	5.1E-06	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	MTF			
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW36D	LW37D	LW38D	LW39D	LW40D	LW45D	O	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0411059-08 11/10/2004	0411059-09 11/10/2004	0411059-10 11/10/2004	0411059-11 11/10/2004	0411150-01 11/29/2004	0411065-04 11/11/2004	FV82Q 10/24/2003	
SEMIVOLATILES (µg/L)																				
EPA Method SW8270																				
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	2.97 U	3.04 U	2.95 U	3.17 U	3.19 U	3.12 U	1 U	
2-Methylnaphthalene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	---	---	0.99 U	1.01 U	0.984 U	1.06 U	1.06 U	1.04 U	1 U	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.99 U	1.01 U	0.984 U	1.06 U	1.06 U	1.04 U	1.2	
Bis(2-Ethylhexyl)phthalate	3.0	8000	78000	--	--	2.2	--	--	2.2	--	---	---	0.99 U	1.01 U	0.984 U	1.06 U	1.06 U	3.97	1 U	
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	0.99 U	1.01 U	0.984 U	1.06 U	1.06 U	4.35	1 U	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	0.99 U	1.01 U	0.984 U	1.06 U	1.06 U	1.04 U	1.0	
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	0.99 U	1.01 U	0.984 U	1.06 U	1.06 U	1.04 U	1.8	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.99 U	1.01 U	0.984 U	1.06 U	1.06 U	1.06 U	2.1 U	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.99 U	1.01 U	0.984 U	1.06 U	1.06 U	1.04 U	1 U	
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	4.95 U	5.07 U	4.92 U	5.28 U	5.32 U	5.19 U	5.2 U	
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.99 U	1.01 U	0.984 U	1.06 U	1.06 U	1.04 U	1 U	
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	1.98 U	2.03 U	1.97 U	2.12 U	2.13 U	2.08 U	3.1 U	
EPA Method SW8270SIM																				
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA	NA	
PAHs (µg/L)																				
EPA Method SW8270 - SIM																				
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.0505 U	0.054 U	0.12	0.145	0.05 U	0.473	NA	
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.105	NA	
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	5.44	NA	
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.0525 U	NA	
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.0525 U	NA	
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.0525 U	NA	
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.0525 U	NA	
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.0525 U	NA	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
Fluoranthene	6.16	--	--	3380 (a)	--	140	--	--	140	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.116	NA	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.0505 U	0.054 U	0.19	0.0517 U	0.05 U	0.935	NA	
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.0525 U	NA	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.0505 U	0.054 U	0.08	0.114	0.09 U	0.557	NA	
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.339	NA	
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	0.0505 U	0.054 U	0.05 U	0.0517 U	0.05 U	0.0945	NA	
VOLATILES (µg/L)																				
EPA Method SW8260																				
1,2,4-Trimethylbenzene	130(a)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
1,3,5-Trimethylbenzene	130 (c)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	---	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.4	1.5	
Ethylbenzene	7.3	--	200,000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	18.3	27	
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	2 U	2 U	2 U	2 U	2 U	2 U	1 U	
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	1 U	1 U	1 U	1 U	1 U	1.88	NA	
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1.33	3	
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	4.92	29	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	1 U	1 U	1 U	1 U	1 U	5 U	
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	1 U	1 U	1 U	1 U	1.63	1 U	
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	2.85	5.6	
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1.4	

7/19/05 \\Edmdata\wprod\231\009\132\Phill RI 071906\Phill RI Rpt_App D Lower GW 1

Landau Associates

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**TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI**

											MTF	MTF	MTF	MTF	MTF	MTF	MTF		
SCREENING CRITERIA																			
Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW36D	LW37D	LW38D	LW39D	LW40D	LW45D	O	
Sample Identification:	Laboratory Identification:	Date Collected:	Fresh	Fresh	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0411059-08	0411059-09	0411059-10	0411059-11	0411150-01	0411065-04	FY82Q	
Aquatic	Birds	Mammals	Acute	Chronic								11/10/2004	11/10/2004	11/10/2004	11/10/2004	11/29/2004	11/11/2004	10/24/2003	
HYDROCARBONS (mg/L)																			
NWTPH-HCID																			
Gasoline	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	
Diesel	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	
NWTPH-Dx																			
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	---	---	0.252	0.25 U	0.954	0.455	0.263	3.91	NA	
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	---	---	0.58	0.5 U	0.702	0.52	0.572	1.9	NA	
NWTPH-G																			
TPH-Gasoline Range	--	--	--	--	--	--	--	--	12	---	---	0.100 U	0.100 U	0.120	0.133	0.100 U	0.776	NA	
PRIORITY POLLUTANT																			
METALS (mg/L)																			
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	---	---	1.5	0.001 U	0.00578	0.00867	0.0107	0.00411	0.0532	NA
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	3433	0.57	0.074	--	---	0.005	0.005 U	0.0261	0.0138	0.0124	0.0071	0.14	NA	
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	---	0.004	0.01 U	0.0198	0.01 U	0.01 U	0.01 U	0.12	NA	
Lead (7421)	0.0025 (*)	28	393	0.043 (l)	0.0037 (l) (*)	--	0.065	0.0025 (*)	--	---	0.02	0.00025 U	0.0098	0.0002 U	0.0003	0.00162	0.106	NA	
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	0.01	0.005 U	0.0117	0.005 U	0.005 U	0.0211	0.132	NA	
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	0.015	0.01 U	0.0505	0.01 U	0.01 U	0.206	0.416	NA	
BETX (µg/L)																			
EPA Method SW8021B																			
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	7.3	--	200000 (l)	32000 (a)	--	2100	--	25000	110,000	--	--	NA	NA	NA	NA	NA	NA	NA	
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	200,000	78,000	---	--	NA	NA	NA	NA	NA	NA	NA	
Xylenes, Total	13 (b)	--	6000 (b)	--	--	--	--	--	22,000	---	--	NA	NA	NA	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																			
EPA Method SW8290																			
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

												MTF	MTF	MTF	MTF	MTF	MTF		
Sample Identification: Laboratory Identification: Date Collected		SCREENING CRITERIA										R FY82R 10/24/2003	RW2 FY82D 10/23/2003	W Dup of RW2 FY82A 10/23/2003	RW2 0402113-04 2/23/2004	W Dup of RW2 0402113-05 2/23/2004	RW2 0406050-02 6/9/2004		
		Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration							Site-Specific Background	
		Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker								Volatilization to Outdoor Air Occupational
SEMIVOLATILES (µg/L)																			
EPA Method SW8270																			
2,4-Dimethylphenol		42	--	--	2120 (a)	--	850	--	--	850	--	--	1 U	3 U	3 U	2.97 U	2.93 U	3.07 U	
2-Methylnaphthalene		620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	1 U	7.2 U	5.4 U	0.989 U	10.4	5.41	
Acenaphthene		520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	1 U	1 U	1 U	0.989 U	0.978 U	1.02 U	
Bis(2-Ethylhexyl)phthalate		3.0	8000	79000	--	--	2.2	--	--	2.2	--	--	1 U	1 U	1 U	0.989 U	0.978 U	1.02 U	
Carbazole		--	--	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	0.989 U	0.978 U	1.02 U	
Dibenzofuran		3.7	--	--	--	--	--	--	--	--	--	--	1 U	1 U	1 U	0.989 U	0.978 U	1.02 U	
Di-n-Butylphthalate		35	800	2,200,000	--	--	4500	--	--	4500	--	--	1 U	1 U	1 U	0.989 U	0.978 U	1.02 U	
Fluorene		3.9	--	--	--	--	5300	--	--	5300	--	--	2 U	1 U	1 U	0.989 U	0.978 U	1.02 U	
Naphthalene		620	--	284,000	2300 (a)	620 (a)	--	--	--	680	--	--	1 U	1.8	1.3	0.989 U	3.63	1.56	
Pentachlorophenol		15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	5 U	8.1	6.4	4.95 U	8.69	47.3	
Phenanthrene		6.3	--	284000 (b)	--	--	--	--	--	--	--	--	1 U	1 U	1 U	0.989 U	0.978 U	1.02 U	
Phenol		110	--	--	10200 (a)	2500 (a)	1,700,000	--	--	--	--	--	3 U	2 U	2 U	1.98 U	1.96 U	2.05 U	
EPA Method SW8270SIM																			
Pentachlorophenol		15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	NA	NA	NA	8.51	NA	NA	
PAHs (µg/L)																			
EPA Method SW8270 - SIM																			
2-Methylnaphthalene		620	--	284,000	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	
Acenaphthene		520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	NA	NA	NA	NA	NA	NA	
Acenaphthylene		620 (b)	--	284,000	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	
Anthracene		13	--	--	--	--	40,000	--	--	40,000	--	--	NA	NA	NA	NA	NA	NA	
Benzo(a)anthracene		0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	NA	NA	NA	NA	NA	NA	
Benzo(a)pyrene		0.014	--	--	--	--	0.018	--	--	0.018	9.53	--	NA	NA	NA	NA	NA	NA	
Benzo(b)fluoranthene		6.15 (d)	--	--	--	--	0.018	--	--	0.018	--	--	NA	NA	NA	NA	NA	NA	
Benzo(g,h,i)perylene		--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	
Benzo(k)fluoranthene		--	--	--	--	--	0.018	--	--	0.018	--	--	NA	NA	NA	NA	NA	NA	
Chrysene		--	--	--	--	--	0.018	--	--	0.018	--	--	NA	NA	NA	NA	NA	NA	
Dibenzofuran		3.7	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	
Fluoranthene		5.16	--	--	3960 (a)	--	140	--	--	140	--	--	NA	NA	NA	NA	NA	NA	
Fluorene		3.9	--	--	--	--	5300	--	--	5300	--	--	NA	NA	NA	NA	NA	NA	
Indeno(1,2,3-cd)pyrene		--	--	--	--	--	0.018	--	--	0.018	--	--	NA	NA	NA	NA	NA	NA	
Naphthalene		620	--	284,000	2300 (a)	620 (a)	--	--	--	680	--	--	NA	NA	NA	NA	NA	NA	
Phenanthrene		620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA	
Pyrene		--	--	--	--	--	4000	--	--	4000	--	--	NA	NA	NA	NA	NA	NA	
VOLATILES (µg/L)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene		130(e)	--	200000 (e)	--	--	--	--	--	1300	--	--	1 U	16	17	61	67.9	20.5	
1,3,5-Trimethylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	1400	--	--	1 U	4.4	5.1	18.1	20.8	5.98	
4-Isopropyltoluene		9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	1 U	1 U	1 U	1.85	2.19	1 U	
Benzene		130	--	200,000 (e)	5900 (a)	--	5.1 (g)	--	--	1760	13,000	--	1 U	3.8	3.4	10.5	5.35	3.57	
Ethylbenzene		7.3	--	200000 (e)	32000 (a)	--	2100	--	--	110,000	--	--	3.8	2.6	2.7	10.5	11.9	3.41	
Isopropylbenzene		130	--	200000 (e)	--	--	--	--	--	--	--	--	43	28	29	36.5	40.8	39.3	
m,p-Xylene		13 (h)	--	8000 (h)	--	--	--	--	--	22000 (i)	--	--	9.4	4.3	4.5	4.66	5.89	3.34	
Methyl tert-Butyl Ether		--	--	--	--	--	--	--	--	31,000	650,000	--	NA	NA	NA	1 U	1 U	1 U	
n-Butylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	1.7	3.6	3.9	4.54	5.23	4.62	
n-Propylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	20	35	36	55.3	61.9	60.8	
Naphthalene		620	--	284,000	2300 (a)	620 (a)	--	--	--	680	--	--	5 U	5 U	5 U	3.28	4.49	5.64	
p-Xylene		1.8	--	8000 (h)	--	--	--	--	--	22000 (i)	--	--	1 U	1 U	1 U	1.67	2.22	1 U	
sec-Butylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	4.3	5.1	5.4	7.63	8.99	8.48	
tert-Butylbenzene		130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	1 U	1.2	1.2	1.1	1 U	1.56	
Toluene		9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	2.5	1 U	1 U	1 U	1 U	1 U	

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**TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI**

												MTF	MTF	MTF	MTF	MTF	MTF			
SCREENING CRITERIA																				
Oregon SLVs - Surface Water				Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	R		W		W		W	
													FY82R	FY82D	FY82A	RW2	Dup of RW2	Dup of RW2	RW2	
													10/24/2003	10/23/2003	10/23/2003	0402113-04	0402113-05	0402113-05	0406059-02	
Sample Identification: Laboratory Identification: Date Collected:	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational									
HYDROCARBONS (mg/L)																				
NWTPH-HCID																				
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA
NWTPH-Dx																				
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	0.73	0.72	1.04	1.08	1.64	1.64	1.64
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	0.5 U	0.5 U	0.492 U	0.492 U	0.517 U	0.517 U	0.517 U
NWTPH-G																				
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	1.2	1.2	2.61	2.44	1.72	1.72	1.72
PRIORITY POLLUTANT METALS (mg/L)																				
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	---	---	1.5	NA	0.019	0.018	0.0223	0.0214	0.0188	0.0188	0.0188
Chromium (6010)	0.011 (k)	--	26 (k)	0.29 (l)	0.068 (l)	3433	0.57	0.074	--	---	---	0.005	NA	0.005 U	0.005 U	0.0076	0.0077	0.0136	0.0136	0.0136
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	---	---	0.004	NA	0.002 U	0.002 U	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U
Lead (7421)	0.0025 (*)	28	323	0.043 (l)	0.0007 (l) (*)	--	0.065	0.0025 (j)	--	---	---	0.02	NA	0.001 U	0.001 U	0.00506	0.0001 U	0.0001 U	0.0001 U	0.0001 U
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	NA	0.01 U	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U	0.005 U
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	NA	0.052 U	0.008 U	0.0724	0.01 U	0.0105	0.0105	0.0105
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.9	--	200000 (l)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	75,000	---	---	NA	NA	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (b)	--	--	--	--	--	--	22,000	---	---	NA	NA	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	MTF	MTF	MTF
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	W Dup of RW2 0406036-01 6/9/2004	RW2 0408036-06 8/5/2004	W Dup of RW2 0408036-03 8/5/2004	RW2 0411051-04 11/9/2004	W Dup of RW2 0411051-01 11/9/2004	LW29D FZ04D 10/27/2003	LW29D 0402080-07 2/17/2004
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational								
SEMIVOLATILES (µg/L)																			
EPA Method SW8270																			
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	2.92 U	3 U	3 U	3.04 U	2.95 U	3.1 U	2.86 UJ
2-Methylnaphthalene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	---	---	6.08	5.49	6.18	2.22	2.67	1 U	0.961 UJ
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.975 U	1 U	1 U	1.01 U	0.984 U	1 U	0.961 UJ
bis(2-Ethylhexyl)phthalate	3.0	8000	75000	--	--	2.2	--	--	2.2	--	---	---	0.975 U	1 U	1 U	1.01 U	0.984 U	1 U	0.961 UJ
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	0.975 U	1 U	1 U	1.01 U	0.984 U	1 U	0.961 UJ
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	0.975 U	1 U	1 U	1.01 U	0.984 U	1 U	0.961 UJ
Di-n-Butylphthalate	35	600	2,200,000	--	--	4500	--	--	4500	--	---	---	0.975 U	1 U	1 U	1.01 U	0.984 U	1 U	0.961 UJ
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.975 U	1 U	1 U	1.01 U	0.984 U	1 U	0.961 UJ
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1.69	1.58	1.87	1.01 U	0.984 U	1 U	0.961 UJ
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	46.7	12.9	13.5	5.06 U	4.92 U	5.2 U	4.8 UJ
Phenanthrene	6.3	--	284,000 (b)	--	--	--	--	--	--	--	---	---	0.975 U	1 U	1 U	1.01 U	0.984 U	1 U	0.961 UJ
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	1.95 U	2 U	2 U	2.02 U	1.97 U	2.1 U	2.0 UJ
EPA Method SW8270SIM																			
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	1.84	2.12	NA	1.92 UJ
PAHs (µg/L)																			
EPA Method SW8270 - SIM																			
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	0.1 U	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	0.1 U	NA
Fluoranthene	6.16	--	--	3980 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Phenanthrene	620 (b)	--	284,000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	0.1 U	0.0489 UJ
VOLATILES (µg/L)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	1300	---	---	19.8	36	33.8 J	4.51	5.6	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	1400	---	---	7.1	11.6	10.2 J	1.03	1.31	1 U	1 U
4-Isopropyltoluene	9.6 (f)	--	104,000 (f)	--	--	--	--	--	--	--	---	---	1 U	1.25	1.1 J	1 U	1 U	1 U	1 U
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	---	3.32	3.88	3.84 J	1	1.06	1 U	0.4 UJ
Ethylbenzene	7.3	--	200,000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	3.97	6.19	5.97 J	1.89	2.06	1 U	1 U
Isopropylbenzene	130	--	200,000 (e)	--	--	--	--	--	--	--	---	---	41	60.9	64.8 J	57.3	62.4	1 U	1 U
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	3.08	9.61	8.88 J	2 U	2 U	1 U	2 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	--	---	---	4.5	5.36	5.13 J	4.91	6.09	1 U	1 U
n-Propylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	--	---	---	62.7	68.1	68.7 J	72.2	77.6	1 U	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	6.03	2.99	2.74 J	1 U	1 U	5 U	1 U
p-Xylene	1.8	--	200,000 (f)	--	--	--	--	--	--	22000 (i)	---	---	1 U	2.75	2.51 J	1.7	1.82	1 U	1 U
sec-Butylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	--	---	---	8.82	10.7	10.7 J	7.84	9.22	1 U	1 U
tert-Butylbenzene	130 (e)	--	200,000 (e)	--	--	--	--	--	--	--	---	---	1.64	1.75	1.82 U	1.48	1.66	1 U	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											MTF	MTF	MTF	MTF	MTF	BTTF	BTTF		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	W	W	W	W	W			
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		Dup of RW2	RW2	Dup of RW2	RW2	Dup of RW2			
													0406059-01	0406036-06	0406036-03	0411051-04	0411051-01	LW29D FZ04D	LW29D	
													6/9/2004	8/5/2004	8/5/2004	11/9/2004	11/9/2004	10/27/2003	0402080-07 2/17/2004	
HYDROCARBONS (mg/L)																				
NWTPH-HCID																				
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	
Diesel	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA	NA	
NWTPH-Dx																				
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	1.45	1.42	1.42	0.904	0.991	0.25 U	0.242 U	
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.8 U	0.499 U	0.493 U	0.477 U	0.491 U	0.8 U	0.483 U	
NWTPH-G																				
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	1.83	1.72	1.8	1.18	1.23	0.25 U	0.100 U	
PRIORITY POLLUTANT METALS (mg/L)																				
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.0188	0.0194	0.02	0.0202	0.0207	0.004	0.0061	
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	3433	0.57	0.074	--	--	---	0.005	0.0144	0.0152	0.0143	0.0129	0.0197	0.019	0.0137	
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.01 U	0.01 U	0.01 U	0.01 U	0.019	0.01 U	
Lead (7421)	0.0025 (*)	28	323	0.043 (l)	0.0002 (l) (*)	--	0.069	0.0025 (*)	--	--	---	0.02	0.0001 U	0.0001 U	0.0001 U	0.00014 U	0.00372 U	0.006	0.00171	
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	0.005 U	0.0113	0.0412	0.02	0.005 U	
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.011	0.01 U	0.01 U	0.0116 U	0.0306	0.04	0.0336	
BETX (µg/L)																				
EPA Method SW8021B																				
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA	NA	
Ethylbenzene	7.3	--	200000 (b)	32000 (a)	--	2100	--	--	20000	110000	--	--	NA	NA	NA	NA	NA	NA	NA	
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	--	NA	NA	NA	NA	NA	NA	NA	
Xylenes, Total	13 (h)	--	8000 (b)	--	--	--	--	--	--	22,000	---	--	NA	NA	NA	NA	NA	NA	NA	
DIOXIN/FURANS (ng/L)																				
EPA Method SW8290																				
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	--	NA	NA	NA	NA	NA	NA	NA	

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

											BTTF	BTTF	BTTF	BTTF	BTTF	BTTF		
SCREENING CRITERIA																		
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW29D	LW29D	LW29D	LW30D	LW30D	LW30D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0406050-07 6/8/2004	0408006-07 8/2/2004	0411047-03 11/8/2004	FZ04F 10/27/2003	0402085-02 2/18/2004	0406050-09 6/8/2004
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	1.296 U	3.04 U	3.03 U	3.3 U	3.09 U	2.93 U
2-Methylnaphthalene	520 (b)	--	204000 (b)	--	--	--	--	--	--	--	---	---	0.987 U	1.01 U	1.01 U	1.1 U	1.03 U	0.976 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.987 U	1.01 U	1.01 U	1.1 U	1.03 U	0.976 U
bis(2-Ethylhexyloxy)phthalate	3.0	8000	79000	--	--	2.2	--	--	2.2	--	---	---	0.987 U	1.37	1.33	1.1 U	1.03 U	0.976 U
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	0.987 U	1.01 U	1.01 U	1.1 U	1.03 U	0.976 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	0.987 U	1.01 U	1.01 U	1.1 U	1.03 U	0.976 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	0.987 U	1.01 U	1.01 U	1.1 U	1.03 U	0.976 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.987 U	1.01 U	1.01 U	1.1 U	1.03 U	0.976 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.987 U	1.01 U	1.01 U	1.1 U	1.03 U	0.976 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	4.94 U	5.07 U	5.05 U	5.6 U	5.15 U	4.88 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.987 U	1.01 U	1.01 U	1.1 U	1.03 U	0.976 U
Phenol	110	--	--	10200 (a)	2660 (a)	1200,000	--	--	--	--	---	---	1.97 U	2.03 U	2.02 U	2.2 U	2.06 U	1.95 U
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	0.11 U	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	0.11 U	NA	NA
Fluoranthene	6.16	--	--	3900 (a)	--	140	--	--	140	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	0.05 U	0.05 U	0.0495 U	0.11 U	0.0506 U	0.05 U
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200,000	6300 (a)	--	51 (g)	--	--	51	1700	10,000	---	0.3 U	0.3 U	0.3 U	1 U	0.4 U	0.3 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	2 U	2 U	2 U	1 U	2 U	2 U
Methyltert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	1 U	1 U	1 U	1 U	1 U	1 U
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	1 U	1 U	5 U	1 U	1 U
p-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U

7/19/05 \\Edmdata\wproc\231\009\132\PHII RI 071905\PHII RI Rpt_App D Lower GW 1

Landau Associates

BZTO104(e)023581

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

												BTTF	BTTF	BTTF	BTTF	BTTF	BTTF	
Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA																	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background						
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		LW29D 0406050-07 6/8/2004	LW29D 0406006-07 8/2/2004	LW29D 0411047-03 11/8/2004	LW30D FZ04F 10/27/2003	LW30D 0402085-02 2/18/2004	LW30D 0406050-09 6/8/2004
HYDROCARBONS (mg/L)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	---	---	---	NA	NA	NA	NA	NA	NA
NWTPH-Dx																		
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	---	---	---	0.248 U	0.306	0.252 U	0.25 U	0.352	0.488
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	---	---	---	0.497 U	0.476 U	0.603 U	0.5 U	0.483 U	0.517 U
NWTPH-G																		
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	0.100 U	0.100 U	0.100 U	0.25 U	0.100 U	0.100 U
PRIORITY POLLUTANT																		
METALS (mg/L)																		
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.00631	0.00694	0.00658	0.01	0.0086	0.0146
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	3433	0.57	0.074	--	--	---	0.005	0.0164	0.015	0.024	0.026	0.0196	0.119
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.01 U	0.0115	0.04	0.016	0.156
Lead (7421)	0.0025 (n)	28	323	0.043 (l)	0.0097 (n) (*)	--	0.065	0.0025 (n)	--	--	---	0.02	0.00132	0.000613	0.00274	0.008	0.00333	0.0292
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	0.005 U	0.03	0.005 U	0.0682
Zinc (6010)	0.120	135	1230	0.1 (l)	0.1 (l)	25	0.12	0.12	25	--	---	0.015	0.0106	0.01 U	0.0216	0.07	0.0383	0.264
BETX (µg/L)																		
EPA Method SW8021B																		
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.1	--	200000 (b)	32000 (g)	--	2100	--	--	20,000	110,000	--	--	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	--	--	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	6000 (b)	--	--	--	--	--	--	22,000	--	--	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																		
EPA Method SW8290																		
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA											BTTF								BTTF								BTTF								BTTF								BTTF							
Sample Identification: Laboratory Identification: Date Collected:	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW30D	LW30D	LW32D	LW32D	LW32D	LW32D	LW32D	LW32D	LW30D	LW30D	LW32D	LW32D	LW32D	LW32D	LW30D	LW30D	LW32D	LW32D	LW32D	LW32D																		
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0408020-05	0411047-05	FZ04	0402060-06	0406050-05	0408006-05	0411052-04	0408020-05	0411047-05	FZ04	0402060-06	0406050-05	0408006-05	0411052-04	0408020-05	0411047-05	FZ04	0402060-06	0406050-05	0408006-05	0411052-04																	
SEMIVOLATILES (µg/L)																																																		
EPA Method SW8270																																																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	2.96 U	2.99 U	3.2 U	2.9 U	3.04 U	3.03 U	2.93 U	2.96 U	2.99 U	3.2 U	2.9 U	3.04 U	3.03 U	2.93 U	2.96 U	2.99 U	3.2 U	2.9 U	3.04 U	3.03 U	2.93 U																	
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U																	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U																	
bis(2-Ethylhexyl)phthalate	3.0	8000	79000	--	--	2.2	--	--	2.2	--	---	---	1.73 U	2.04 U	2.2	2.51 U	2.21	2.01	1.05	1.73 U	2.04 U	2.2	2.51 U	2.21	2.01	1.05	1.73 U	2.04 U	2.2	2.51 U	2.21	2.01	1.05																	
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U																	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U																	
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U																	
Fluorene	3.3	--	--	--	--	5300	--	--	5300	--	---	---	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U																	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U																	
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	4.96 U	4.89 U	5.3 U	4.83 U	5.06 U	5.05 U	4.89 U	4.96 U	4.89 U	5.3 U	4.83 U	5.06 U	5.05 U	4.89 U	4.96 U	4.89 U	5.3 U	4.83 U	5.06 U	5.05 U	4.89 U																	
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U	0.992 U	0.997 U	1.1 U	0.965 U	1.01 U	1.01 U	0.978 U																	
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	1.98 U	1.99 U	2.1 U	1.93 U	2.02 U	2.02 U	1.96 U	1.98 U	1.99 U	2.1 U	1.93 U	2.02 U	2.02 U	1.96 U	1.98 U	1.99 U	2.1 U	1.93 U	2.02 U	2.02 U	1.96 U																	
EPA Method SW8270SIM																																																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																	
PAHs (µg/L)																																																		
EPA Method SW8270 - SIM																																																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	0.11 U	NA	NA	NA	NA	NA	NA	NA	0.11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																	
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	0.05 U	NA	0.11 U	0.0473 UJ	0.05 U	0.05 U	NA	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	3.63	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Benzo(b)fluoranthene	6.15 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	0.11 U	NA	NA	NA	NA	NA	NA	NA	0.11 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA																	
Fluoranthene	6.16	--	--	3980 (a)	--	140	--	--	140	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Phenanthrene	620 (b)	--	284000 (a)	--	--	--	--	--	--	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U	0.05 U	0.05 U	0.11 U	0.0473 UJ	0.05 U	0.05 U	0.0498 U																	
VOLATILES (µg/L)																																																		
EPA Method SW8260																																																		
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U																	
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U																	
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U																	
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	---	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	0.3 U	1 U	0.3 U	0.3 U	0.3 U																	
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U																	
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U																	
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	2 U	2 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	1 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U	2 U																	
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U																	
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U																	
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U																	
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--																																									

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

												BTF	BTF	BTF	BTF	BTF	BTF	BTF												
												SCREENING CRITERIA																		
												Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background							
Sample Identification:				Fresh	Fresh	Fish	Fresh	Fresh	Organism	Construction	Volatilization	Site-Specific Background	LW30D	LW30D	LW32D	LW32D	LW32D	LW32D	LW32D	LW32D										
Laboratory Identification:				Acute	Chronic	Consumption Only	CMC (Acute)	CCC (Chronic)	Only	and Excavation	to Outdoor Air		Worker	Occupational	0408020-05	0411047-05	FZ041	0402080-06	0406050-05	0408006-05	0411052-04									
Date Collected:	Aquatic	Birds	Mammals												8/3/2004	11/8/2004	10/27/2003	2/17/2004	6/8/2004	8/2/2004	11/9/2004									
HYDROCARBONS (mg/L)																														
NWTPH-HCID																														
Gasoline																														
Diesel																														
NWTPH-Dx																														
TPH-Diesel Range																														
TPH-Motor Oil Range																														
NWTPH-G																														
TPH-Gasoline Range																														
PRIORITY POLLUTANT																														
METALS (mg/L)																														
Arsenic (7060)																														
Chromium (6010)																														
Copper (6010)																														
Lead (7421)																														
Nickel (6010)																														
Zinc (6010)																														
BETX (µg/L)																														
EPA Method SW8021B																														
Benzene																														
Ethylbenzene																														
Toluene																														
Xylenes, Total																														
DIOXIN/FURANS (ng/L)																														
EPA Method SW8290																														
Total TEQ																														

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

											AR	AR	AR	AR	AR				
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA																		
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW10D FY82B 10/23/2003	LW10D 0402113-02 2/23/2004	LW10D 0406073-02 6/10/2004	LW10D 0409044-03 8/6/2004	LW10D 0411051-03 11/9/2004		
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational								
SEMIVOLATILES (µg/L)																			
EPA Method SW8270																			
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	3 U	3 U	321 U	3 U	2.96 U		
2-Methylnaphthalene	520 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	1 U	0.999 U	1.07 U	1 U	0.985 U		
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1 U	0.999 U	1.07 U	1 U	0.985 U		
Bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	---	---	1 U	0.999 U	1.07 U	1 U	0.985 U		
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1 U	0.999 U	1.07 U	1 U	0.985 U		
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	1 U	0.999 U	1.07 U	1 U	0.985 U		
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	1 U	0.999 U	1.07 U	1 U	0.985 U		
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	1 U	0.999 U	1.07 U	1 U	0.985 U		
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	0.999 U	1.07 U	1 U	0.985 U		
Pentachlorophenol	5	--	1800	19 (c)	15 (e)	3.0	19	15	3.0	--	---	---	5 U	5 U	5.35 U	5 U	4.93 U		
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1 U	0.999 U	1.07 U	1 U	0.985 U		
Phenol	110	--	--	10200 (a)	2560 (a)	1,700,000	--	--	--	--	---	---	2 U	2 U	2.14 U	2 U	1.97 U		
EPA Method SW8270SIM																			
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	0.94	0.491 U	0.509 U	0.5 U	0.489 U		
PAHs (µg/L)																			
EPA Method SW8270 - SIM																			
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA		
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA		
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA		
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA		
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA		
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.63	---	---	NA	NA	NA	NA	NA		
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA		
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA		
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA		
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA		
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA		
Fluoranthene	6.16	--	--	3980 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA		
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA		
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA		
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA		
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA		
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA		
VOLATILES (µg/L)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U		
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U		
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U		
Benzene	130	--	200000 (e)	5300 (a)	--	51 (g)	--	--	51	1700	13,000	---	1 U	0.4 U	0.3 U	0.3 U	0.3 U		
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U		
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U		
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	2 U	2 U	2 U	2 U		
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	NA	1 U	1 U	1 U	1 U		
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U		
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U		
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	5 U	1 U	1 U	1 U	1 U		
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	1 U	1 U	1 U	1 U		
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U		
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U		
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U		

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

												AR	AR	AR	AR	AR	
Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA																
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW10D	LW10D	LW10D	LW10D	LW10D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		FY82B	0402113-02	0406073-02	0406044-03	0411051-03
													10/23/2003	2/23/2004	6/10/2004	8/6/2004	11/9/2004
HYDROCARBONS (mg/L)																	
NWTPH-HCID																	
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA
NWTPH-Dx																	
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	0.25 U	0.247 U	0.238 U	0.245 U	0.24 U
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	0.5 U	0.494 U	0.476 U	0.49 U	0.481 U
NWTPH-G																	
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/L)																	
Arsenic (7060)	0.15 (l) (*)	18 (l)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.024	0.0231	0.0186	0.0198	0.0168
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.055 (l)	3433	0.57	0.074	--	--	---	0.005	0.012	0.0114	0.0156	0.0185	0.0233
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.011	0.01 U	0.01 U	0.01 U	0.01 U
Lead (7421)	0.0025 (*)	38	353	0.049 (l)	0.0007 (l) (*)	--	0.065	0.0025 (*)	--	--	---	0.02	0.003	0.000568	0.0001	0.00123	0.0021
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.01 U	0.005 U	0.005 U	0.005 U	0.005 U
Zinc (6010)	0.120	105	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.024	0.01 U	0.01 U	0.01 U	0.0158
BETX (µg/L)																	
EPA Method SW8021B																	
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (b)	32000 (a)	--	2100	--	--	29,000	110,000	--	--	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	--	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (h)	--	--	--	--	--	--	22,000	---	--	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																	
EPA Method SW8290																	
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	--	NA	NA	NA	NA	NA

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification Laboratory Identification: Date Collected:	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	B2 FY64E 10/20/2003	B2 0402099-02 2/19/2004	B2 0408019-03 8/3/2004	J2 FY64I 10/21/2003	J2 0402105-02 2/20/2004	J2 0408019-05 8/3/2004
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational							
SEMIVOLATILES (µg/L)																		
EPA Method SW8270																		
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	---	---	3 U	2.92 U	3.01 U	3 U	2.98 U	3.02 U
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	1 U	0.973 U	1 U	1 U	0.993 U	1.01 U
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	1 U	0.973 U	1 U	1 U	0.993 U	1.01 U
Bis(2-Ethylhexyl)phthalate	3.0	8000	73000	--	--	2.2	--	--	2.2	--	---	---	1 U	0.973 U	1 U	1 U	0.993 U	1.01 U
Carbazole	--	--	--	--	--	--	--	--	--	--	---	---	1 U	0.973 U	1 U	1 U	0.993 U	1.01 U
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	1 U	0.973 U	1 U	1 U	0.993 U	1.01 U
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	---	---	1 U	0.973 U	1 U	1 U	0.993 U	1.01 U
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	1 U	0.973 U	1 U	1 U	0.993 U	1.01 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	1 U	0.973 U	1 U	1 U	0.993 U	1.01 U
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	5 U	4.86 U	5.02 U	5 U	4.87 U	5.04 U
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	---	---	1 U	0.973 U	1 U	1 U	0.993 U	1.01 U
Phenol	110	--	--	10200 (a)	2500 (a)	1,700,000	--	--	--	--	---	---	2 U	1.95 U	2.01 U	2 U	1.98 U	2.01 U
EPA Method SW8270SIM																		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	---	---	0.5 U	0.475 U	0.5 U	0.5 U	0.483 U	0.5 U
PAHs (µg/L)																		
EPA Method SW8270 - SIM																		
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	---	---	NA	NA	NA	NA	NA	NA
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	---	---	NA	NA	NA	NA	NA	NA
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.53	---	---	NA	NA	NA	NA	NA	NA
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Fluoranthene	6.16	--	--	3890 (a)	--	140	--	--	140	--	---	---	NA	NA	NA	NA	NA	NA
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	---	---	NA	NA	NA	NA	NA	NA
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	---	---	NA	NA	NA	NA	NA	NA
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	NA	NA	NA	NA	NA	NA
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
Pyrene	--	--	--	--	--	4000	--	--	4000	--	---	---	NA	NA	NA	NA	NA	NA
VOLATILES (µg/L)																		
EPA Method SW8260																		
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	---	---	1 U	1 U	1 U	1 U	1 U	1 U
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1400	---	---	1 U	1 U	1 U	1 U	1 U	1 U
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	100	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Benzene	130	--	200,000	3300 (a)	--	51 (g)	--	--	51	1200	10,000	---	1 U	1 U	1 U	1 U	1 U	1 U
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	28,000	110,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	2 U	1 U	1 U	2 U	2 U
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	---	NA	1 U	1 U	NA	1 U	1 U
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
n-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	---	---	5 U	1 U	1 U	5 U	1 U	1 U
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	---	---	1 U	1 U	1 U	1 U	1 U	1 U
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	---	---	1 U	1 U	1 U	1 U	1 U	1 U
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	---	---	1 U	1 U	1 U	1 U	1 U	1 U

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	B2	B2	B2	J2	J2	J2
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		FY64E	0402039-02	0406019-03	FY64I	0402105-02	0406019-05
													10/20/2003	2/19/2004	8/3/2004	10/21/2003	2/20/2004	8/3/2004
HYDROCARBONS (mg/L)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	---	---	---	NA	NA	NA	NA	NA	NA
NWTPH-Dx																		
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	---	---	---	NA	NA	NA	NA	NA	NA
TPH-Motor-Oil Range	--	--	--	--	--	--	--	--	--	---	---	---	NA	NA	NA	NA	NA	NA
NWTPH-G																		
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/L)																		
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.002	0.00507	0.00363	0.004	0.00768	0.0108
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (i)	0.065 (i)	3433	0.57	0.074	--	--	---	0.005	0.005 U	0.0087	0.0161	0.005 U	0.005 U	0.005 U
Copper (6010)	0.009	341	53	0.05 (i)	0.011 (i)	--	0.013	0.009	--	--	---	0.004	0.002 U	0.01 U	0.01 U	0.004	0.01 U	0.01 U
Lead (7421)	0.0025 (*)	28	329	0.043 (i)	0.0007 (i) (*)	--	0.065	0.0025 (*)	--	--	---	0.02	0.001 U	0.0001 U	0.0001 U	0.001 U	0.000156	0.000186
Nickel (6010)	0.052	562	38	0.33 (i)	0.052 (i)	4.6	0.47	0.052	4.6	--	---	0.01	0.01 U	0.005 U	0.005 U	0.01 U	0.005 U	0.005 U
Zinc (6010)	0.120	105	1200	0.1 (i)	0.1 (i)	26	0.12	0.12	26	--	---	0.015	0.006 U	0.01 U	0.01 U	0.006	0.01 U	0.021
BETX (µg/L)																		
EPA Method SW8021B																		
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000		NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (a)	32000 (a)	--	2100	--	--	29,000	110,000	7700		NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	76,000	---		NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8600 (h)	--	--	--	--	--	--	22,000	---		NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																		
EPA Method SW8290																		
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

SCREENING CRITERIA												PH II						PH III		PH IV		PH V		PH VI	
Sample Identification: Laboratory Identification: Date Collected:			Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW1D FY84K 10/21/2003	LW3D FY82J 10/24/2003	LW3D 0402113-10 2/23/2004	LW3D 0408044-01 8/6/2004	LW11D FY82J 10/24/2003	LW11D 0402113-11 2/23/2004					
			Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational												
SEMIVOLATILES (µg/L)																									
EPA Method SW8270																									
2,4-Dimethylphenol																									
42 -- -- 2120 (a) -- 850 -- -- 850 -- -- -- --																									
2-Methylnaphthalene																									
620 (b) -- 284000 (b) -- -- -- -- -- -- -- -- -- --																									
Acenaphthene																									
520 -- -- 1700 (a) 520 (a) 990 -- -- 990 -- -- -- --																									
Bis(2-Ethylhexyl)phthalate																									
3.0 -- 8000 73000 -- -- 2.2 -- -- 2.2 -- -- -- --																									
Carbazole																									
-- -- -- -- -- -- -- -- -- -- -- --																									
Dibenzofuran																									
3.7 -- -- -- -- -- -- -- -- -- -- -- --																									
Di-n-Butylphthalate																									
35 800 2,200,000 -- -- 4500 -- -- 4500 -- -- -- --																									
Fluorene																									
3.9 -- -- -- -- -- 5300 -- -- 5300 -- -- -- --																									
Naphthalene																									
620 -- 284,000 2300 (a) 620 (a) -- -- -- -- 680 -- -- -- --																									
Pentachlorophenol																									
15 -- 1800 19 (b) 15 (c) 3.0 19 15 3.0 -- -- -- --																									
Phenanthrene																									
6.3 -- 284000 (b) -- -- -- -- -- -- -- -- -- --																									
Phenol																									
110 -- -- 10200 (a) 2560 (a) 1,700,000 -- -- -- -- -- --																									
EPA Method SW8270SIM																									
Pentachlorophenol																									
15 -- 1800 19 (c) 15 (c) 3.0 19 15 3.0 -- -- -- --																									
PAHs (µg/L)																									
EPA Method SW8270 - SIM																									
2-Methylnaphthalene																									
620 -- 284,000 -- -- -- -- -- -- -- -- -- --																									
Acenaphthene																									
520 -- -- 1700 (a) 520 (a) 990 -- -- 990 -- -- -- --																									
Acenaphthylene																									
620 (b) -- 284,000 -- -- -- -- -- -- -- -- -- --																									
Anthracene																									
13 -- -- -- -- 40,000 -- -- 40,000 -- -- -- --																									
Benzo(a)anthracene																									
0.027 -- -- -- -- 0.018 -- -- 0.018 -- -- -- --																									
Benzo(a)pyrene																									
0.014 -- -- -- -- 0.018 -- -- 0.018 -- -- -- --																									
Benzo(b)fluoranthene																									
6.16 (c) -- -- -- -- 0.018 -- -- 0.018 -- -- -- --																									
Benzo(g,h,i)perylene																									
-- -- -- -- -- -- 0.018 -- -- 0.018 -- -- -- --																									
Benzo(k)fluoranthene																									
-- -- -- -- -- -- 0.018 -- -- 0.018 -- -- -- --																									
Chrysene																									
-- -- -- -- -- -- 0.018 -- -- 0.018 -- -- -- --																									
Dibenzofuran																									
3.7 -- -- -- -- -- -- -- -- -- -- -- --																									
Fluoranthene																									
6.16 -- -- -- 3980 (a) -- 140 -- -- 140 -- -- -- --																									
Fluorene																									
3.9 -- -- -- -- -- 5300 -- -- 5300 -- -- -- --																									
Indeno(1,2,3-cd)pyrene																									
-- -- -- -- -- -- 0.018 -- -- 0.018 -- -- -- --																									
Naphthalene																									
620 -- 284,000 2300 (a) 620 (a) -- -- -- -- 680 -- -- -- --																									
Phenanthrene																									
620 (b) -- 284000 (b) -- -- -- -- -- -- -- -- -- --																									
Pyrene																									
-- -- -- -- -- 4000 -- -- 4000 -- -- -- --																									
VOLATILES (µg/L)																									
EPA Method SW8260																									
1,2,4-Trimethylbenzene																									
130(e) -- 200000 (e) -- -- -- -- 1300 -- -- -- --																									
1,3,5-Trimethylbenzene																									
130 (e) -- 200000 (e) -- -- -- -- 1400 -- -- -- --																									
4-Isopropyltoluene																									
9.8 (f) -- 104000 (f) -- -- -- -- -- -- -- -- -- --																									
Benzene																									
130 -- 200,000 5800 (a) -- 51 (g) 1700 13,000 -- -- 0.4 U																									
Ethylbenzene																									
7.3 -- 200000 (e) 32000 (a) -- 2100 29,000 110,000 -- -- 1 U																									
Isopropylbenzene																									
130 -- 200,000 (e) -- -- -- -- -- -- -- -- -- --																									
m,p-Xylene																									
13 (h) -- 8000 (h) -- -- -- -- 22000 (i) -- -- -- --																									
Methyl tert-Butyl Ether																									
-- -- -- -- -- -- 31,000 660,000 -- -- -- --																									
n-Butylbenzene																									
130 (e) -- 200000 (e) -- -- -- -- 1 U 1 U 1 U 1 U 1 U 1 U																									
n-Propylbenzene																									
130 (e) -- 200000 (e) -- -- -- -- 1 U 1 U 1 U 1 U 1 U 1 U																									
Naphthalene																									
620 -- 284,000 2300 (a) 620 (a) -- -- -- -- 680 -- -- -- --																									
o-Xylene																									
1.8 -- 8000 (h) -- -- -- -- 22000 (i) -- -- -- --																									
sec-Butylbenzene																									
130 (e) -- 200000 (e) -- -- -- -- 1 U 1 U 1 U 1 U 1 U 1 U																									
tert-Butylbenzene																									
130 (e) -- 200000 (e) -- -- -- -- 1 U 1 U 1 U 1 U 1 U 1 U																									
Toluene																									
9.8 -- 104,000 17500 (a) -- 15,000 -- -- 200,000 78,000 -- -- 1 U																									

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TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA											PH II 10/21/2003	PH II 10/24/2003	PH II 04/02/11-10 2/23/2004	PH II 04/08/11-01 8/8/2004	PH II 10/24/2003	PH II 04/02/11-11 2/23/2004	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW1D FY64K	LW3D FY82J	LW3D 04/02/11-10 2/23/2004	LW3D 04/08/11-01 8/8/2004	LW11D FY82J	LW11D 04/02/11-11 2/23/2004
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational							
HYDROCARBONS (mg/L)																		
NWTPH-ACID																		
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA
NWTPH-Dx																		
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	0.66	0.562
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	--	---	---	NA	NA	NA	NA	0.3 U	0.504 U
NWTPH-G																		
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/L)																		
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.006	0.018	0.0138	0.014	0.005	0.00658
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.065 (l)	3433	0.67	0.074	--	--	---	0.005	0.005	0.006	0.006	0.005 U	0.016	0.0104
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.005	0.004	0.01 U	0.01 U	0.015	0.01 U
Lead (71421)	0.0035 (*)	28	323	0.049 (l)	0.0007 (l) (*)	--	0.065	0.0025 (*)	--	--	---	0.02	0.036	0.001	0.000558	0.000392	0.004	0.00188
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.01 U	0.01 U	0.005 U	0.005 U	0.02	0.005 U
Zinc (6010)	0.120	195	1230	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.019	0.013	0.01 U	0.01 U	0.041	0.01 U
BETX (µg/L)																		
EPA Method SW8021B																		
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (b)	32000 (a)	--	2100	--	--	20,000	110,000	---	---	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	79,000	---	---	NA	NA	NA	NA	NA	NA
Xylenes, Total	13 (h)	--	8000 (b)	--	--	--	--	--	--	22,000	---	---	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																		
EPA Method SW8290																		
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA

BZTO104(e)023590

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected:	SCREENING CRITERIA										PH II	PH II	PH II	PH II	PH II	PH II			
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW11D	LW11D	OX8D	OX8D	OX8D	OX8D	
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0408044-02	0411066-08	0X8D FY27F	0402066-05	0408026-10	0411066-07	
													8/8/2004	11/11/2004	10/22/2003	2/18/2004	8/4/2004	11/11/2004	
SEMIVOLATILES (µg/L)																			
EPA Method SW8270																			
2,4-Dimethylphenol	42	--	--	2120 (a)	--	850	--	--	850	--	--	3 U	2.97 U	NA	NA	3 U	2.87 U		
2-Methylnaphthalene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	1 U	0.989 U	NA	NA	1 U	0.955 U		
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	1 U	0.989 U	NA	NA	1 U	0.955 U		
bis(2-Ethylhexyl)phthalate	3.0	9000	23000	--	--	2.2	--	--	2.2	--	--	1.71	1.17	NA	NA	4.47 U	2.15 U		
Carbazole	--	--	--	--	--	--	--	--	--	--	--	1 U	0.989 U	NA	NA	1 U	0.955 U		
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	1 U	0.989 U	NA	NA	1 U	0.955 U		
Di-n-Butylphthalate	35	800	2,200,000	--	--	4500	--	--	4500	--	--	1 U	0.989 U	NA	NA	1 U	0.955 U		
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	1 U	0.989 U	NA	NA	1 U	0.955 U		
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	1 U	0.989 U	NA	NA	1 U	0.955 U		
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	10	15	3.0	--	--	5 U	4.95 U	NA	NA	5 U	4.78 U		
Phenanthrene	6.3	--	284000 (b)	--	--	--	--	--	--	--	--	1 U	0.989 U	NA	NA	1 U	0.955 U		
Phenol	110	--	--	10200 (a)	2560 (a)	1700,000	--	--	--	--	--	2 U	1.88 U	NA	NA	2 U	1.81 U		
EPA Method SW8270SIM																			
Pentachlorophenol	15	--	1800	19 (c)	15 (c)	3.0	19	15	3.0	--	--	0.5 U	NA	0.62	1.31	NA	NA		
PAHs (µg/L)																			
EPA Method SW8270 - SIM																			
2-Methylnaphthalene	620	--	284,000	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA		
Acenaphthene	520	--	--	1700 (a)	520 (a)	990	--	--	990	--	--	NA	NA	NA	NA	NA	NA		
Acenaphthylene	620 (b)	--	284,000	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA		
Anthracene	13	--	--	--	--	40,000	--	--	40,000	--	--	NA	NA	NA	NA	NA	NA		
Benzo(a)anthracene	0.027	--	--	--	--	0.018	--	--	0.018	9.1	--	NA	NA	NA	NA	NA	NA		
Benzo(a)pyrene	0.014	--	--	--	--	0.018	--	--	0.018	0.33	--	NA	NA	NA	NA	NA	NA		
Benzo(b)fluoranthene	6.16 (d)	--	--	--	--	0.018	--	--	0.018	--	--	NA	NA	NA	NA	NA	NA		
Benzo(g,h,i)perylene	--	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA		
Benzo(k)fluoranthene	--	--	--	--	--	0.018	--	--	0.018	--	--	NA	NA	NA	NA	NA	NA		
Chrysene	--	--	--	--	--	0.018	--	--	0.018	--	--	NA	NA	NA	NA	NA	NA		
Dibenzofuran	3.7	--	--	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA		
Fluoranthene	6.16	--	--	3080 (a)	--	140	--	--	140	--	--	NA	NA	NA	NA	NA	NA		
Fluorene	3.9	--	--	--	--	5300	--	--	5300	--	--	NA	NA	NA	NA	NA	NA		
Indeno(1,2,3-cd)pyrene	--	--	--	--	--	0.018	--	--	0.018	--	--	NA	NA	NA	NA	NA	NA		
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	NA	NA	NA	NA	NA	NA		
Phenanthrene	620 (b)	--	284000 (b)	--	--	--	--	--	--	--	--	NA	NA	NA	NA	NA	NA		
Pyrene	--	--	--	--	--	4000	--	--	4000	--	--	NA	NA	NA	NA	NA	NA		
VOLATILES (µg/L)																			
EPA Method SW8260																			
1,2,4-Trimethylbenzene	130(e)	--	200000 (e)	--	--	--	--	--	--	1300	--	1 U	1 U	NA	NA	2.48 U	4.05 U		
1,3,5-Trimethylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	1480	--	1 U	1 U	NA	NA	1 U	1 U		
4-Isopropyltoluene	9.8 (f)	--	104000 (f)	--	--	--	--	--	--	--	--	1 U	1 U	NA	NA	1 U	1 U		
Benzene	130	--	200,000	5300 (a)	--	51 (g)	--	--	51	1700	13,000	0.3 U	0.3 U	NA	NA	0.3 U	0.9 U		
Ethylbenzene	7.3	--	200000 (e)	32000 (a)	--	2100	--	--	29,000	110,000	--	1 U	1 U	NA	NA	1 U	1 U		
Isopropylbenzene	130	--	200000 (e)	--	--	--	--	--	--	--	--	1 U	1 U	NA	NA	1 U	1 U		
m,p-Xylene	13 (h)	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	2 U	2 U	NA	NA	2 U	2 U		
Methyl tert-Butyl Ether	--	--	--	--	--	--	--	--	--	31,000	550,000	1 U	1 U	NA	NA	1 U	1 U		
n-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	1 U	1 U	NA	NA	1 U	1 U		
p-Propylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	1 U	1 U	NA	NA	1 U	1 U		
Naphthalene	620	--	284,000	2300 (a)	620 (a)	--	--	--	--	680	--	1 U	1 U	NA	NA	1 U	1 U		
o-Xylene	1.8	--	8000 (h)	--	--	--	--	--	--	22000 (i)	--	1 U	1 U	NA	NA	1 U	1 U		
sec-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	1 U	1 U	NA	NA	1 U	1 U		
tert-Butylbenzene	130 (e)	--	200000 (e)	--	--	--	--	--	--	--	--	1 U	1 U	NA	NA	1 U	1 U		
Toluene	9.8	--	104,000	17500 (a)	--	15,000	--	--	200,000	78,000	--	1 U	1 U	NA	NA	1 U	1 U		

TABLE D-2
SUMMARY OF DETECTED ANALYTICAL RESULTS
LOWER ZONE GROUNDWATER SAMPLES
PHASE III RI

Sample Identification: Laboratory Identification: Date Collected	SCREENING CRITERIA											PH II	PH II	PH II	PH II	PH II	PH II	
	Oregon SLVs - Surface Water			Oregon Ambient Water Quality Criteria			National Recommended Water Quality Criteria			Risk-Based Concentration		Site-Specific Background	LW11D	LW11D	OX8D	OX8D	OX8D	OX8D
	Aquatic	Birds	Mammals	Fresh Acute	Fresh Chronic	Fish Consumption Only	Fresh CMC (Acute)	Fresh CCC (Chronic)	Organism Only	Construction and Excavation Worker	Volatilization to Outdoor Air Occupational		0408044-02	0411066-08	0X8D FY72F	0402066-05	0408026-10	0411066-07
													8/6/2004	11/11/2004	10/22/2003	2/18/2004	8/4/2004	11/11/2004
HYDROCARBONS (mg/L)																		
NWTPH-HCID																		
Gasoline	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
Diesel	--	--	--	--	--	--	--	--	--	---	---	---	NA	NA	NA	NA	NA	NA
NWTPH-Dx																		
TPH-Diesel Range	--	--	--	--	--	--	--	--	--	---	---	---	0.79	NA	NA	NA	NA	NA
TPH-Motor Oil Range	--	--	--	--	--	--	--	--	--	---	---	---	0.81 U	NA	NA	NA	NA	NA
NWTPH-G																		
TPH-Gasoline Range	--	--	--	--	--	--	--	--	--	12	---	---	NA	NA	NA	NA	NA	NA
PRIORITY POLLUTANT METALS (mg/L)																		
Arsenic (7060)	0.15 (j) (*)	18 (j)	6	0.34	0.15	0.00014 (g) (*)	0.34 (*)	0.15 (*)	0.00014 (*)	--	---	1.5	0.00558	0.00441	NA	NA	0.0224	0.0246
Chromium (6010)	0.011 (k)	--	25 (k)	0.29 (l)	0.085 (l)	3433	0.57	0.074	--	--	---	0.005	0.0176	0.0216	NA	NA	0.0204	0.0305
Copper (6010)	0.009	341	53	0.05 (l)	0.011 (l)	--	0.013	0.009	--	--	---	0.004	0.01 U	0.01 U	NA	NA	0.01 U	0.0183
Lead (7421)	0.0025 (*)	28	323	0.043 (l)	0.0002 (l) (*)	--	0.065	0.0025 (*)	--	--	---	0.02	0.00274	0.00301	NA	NA	0.00274	0.00723
Nickel (6010)	0.052	562	38	0.33 (l)	0.052 (l)	4.6	0.47	0.052	4.6	--	---	0.01	0.005 U	0.005 U	NA	NA	0.005 U	0.005 U
Zinc (6010)	0.120	105	1290	0.1 (l)	0.1 (l)	26	0.12	0.12	26	--	---	0.015	0.0216	0.0245	NA	NA	0.0238	0.034
BETX (µg/L)																		
EPA Method SW8021B																		
Benzene	130	--	200000	5300 (a)	--	51 (g)	--	--	51	1700	13000	--	NA	NA	NA	NA	NA	NA
Ethylbenzene	7.3	--	200000 (l)	32300 (a)	--	2100	--	--	29,000	110,000	---	--	NA	NA	NA	NA	NA	NA
Toluene	9.8	--	104000	17500 (a)	--	15,000	--	--	200,000	78,000	---	--	NA	NA	NA	NA	NA	NA
Xylenes - Total	13 (h)	--	8000 (l)	--	--	--	--	--	--	22,000	---	--	NA	NA	NA	NA	NA	NA
DIOXIN/FURANS (ng/L)																		
EPA Method SW8290																		
Total TEQ	--	--	--	--	--	5.1E-06	--	--	--	--	---	---	NA	NA	NA	NA	NA	NA

TABLE D-3
SUMMARY OF DETECTED ANALYTICAL RESULTS
GROUNDWATER FOOTNOTES
TIME OIL NORTHWEST TERMINAL

Page 1 of 1

U = Indicates compound was analyzed for, but was not detected at the reported sample detection limit.

UJ = Data validation flag indicating the analyte was not detected in the sample; the reported sample detection limit is an estimate.

J = Data validation flag indicating the analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.

(*) Preliminary screening level less than site-specific background.

(**) The NWTPH-HCID analysis of sample GW9-4 indicated the presence of diesel; however, due to laboratory error no NWTPH-Dx analysis was performed to quantify the diesel concentration.

NA= Not analyzed.

Bold indicates value is a detected constituent.

Box indicates value exceeds one or more screening criteria.

(a) Insufficient data to develop criteria; value presented is the - Lower Observed Effect Level (L.O.E.L.)

(b) Risk-based concentration not available due to lack of toxicity data; therefore, the risk-based concentration for the noncarcinogenic PAH with the lowest risk-based concentration (naphthalene) was used for the comparison.

(c) pH dependent criteria (7.8 pH is used).

(d) Risk-based concentration not available due to lack of toxicity data; therefore, the risk-based concentration for the structurally similar compound and mode of toxic action (fluoranthene) was used for the comparison.

(e) Risk-based concentration not available due to lack of toxicity data; therefore, the risk-based concentration for the structurally similar compound and mode of toxic action (benzene) was used for the comparison.

(f) Risk-based concentration not available due to lack of toxicity data; therefore, the risk-based concentration for the structurally similar compound and mode of toxic action (toluene) was used for the comparison.

(g) Human health risk criteria for carcinogens reported for three risk levels. Value presented is the 10^{-6} risk level, which means the probability of one concern case per million people at the stated concentration.

(h) Value shown is for total xylenes.

(i) Hardness dependant criteria (100 mg/L used).

(j) SLVs shown are for Arsenic III.

(k) SLVs shown are for Chromium III.

Phase III RI Soil Data Tables – September 2003 - November 2004

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 1 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	G07-3 G7-3(0-0.5) 09/29/2003 0.50	G07-4 G7-4(0-0.5) 09/29/2003 0.50	G07-5 G7-5(0-0.5) 09/29/2003 0.50	G10-4 G10-4(0-0.5) 09/29/2003 0.50	G10-4 G10-4(1.0-1.5) 09/29/2003 1.50	G10-5 G10-5(0.0-0.5) 09/29/2003 0.50
Acenaphthene	(ug/kg)	118	38.7	6.67U	6.67U	10	6.67U
Acenaphthylene	(ug/kg)	744	253	20	12	67.3	6.67U
Anthracene	(ug/kg)	1090	404	14	9.33	78	6.67U
Benzo(a)anthracene	(ug/kg)	8270	3050	132	40.7	481	24
Benzo(a)pyrene	(ug/kg)	9240	2790	297	68	936	44.7
Benzo(b)fluoranthene	(ug/kg)	12400	3650	366	101	1200	50.7
Benzo(ghi)perylene	(ug/kg)	2880	920	134	22	386	46
Benzo(k)fluoranthene	(ug/kg)	3800	1160	107	28.7	379	16
Chrysene	(ug/kg)	10000	3560	176	44	561	27.3
Dibenzo(a,h)anthracene	(ug/kg)	660	303	28	6.67U	77.3	8.67
Fluoranthene	(ug/kg)	24500	9200	305	80.7	1360	48
Fluorene	(ug/kg)	247	90	6.67U	6.67U	19.3	6.67U
Indeno(1,2,3-cd)pyrene	(ug/kg)	2600	1270	115	20	337	33.3
Naphthalene	(ug/kg)	96.7	41.3	14	6.67U	16	6.67U
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	NT	NT
Phenanthrene	(ug/kg)	10900	4440	84.7	30.7	547	12.7
Pyrene	(ug/kg)	28900	13600	483	123	2080	67.3

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TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 2 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	G10-5 G10-5(1.0-1.5) 09/29/2003 1.50	G11-3 G11-3(0-0.5) 09/29/2003 0.50	G11-3 G11-3(1.0-1.5) 09/29/2003 1.50	G15-4 G15-4(0-0.5) 09/29/2003 0.50	G15-5 G15-5(0-0.5) 09/29/2003 0.50	G15-6 G15-6(0-0.5) 09/29/2003 0.50
Acenaphthene	(ug/kg)	6.67U	6.67U	6.67U	6.67U	6.67U	6.67U
Acenaphthylene	(ug/kg)	9.33	20.7	6.67U	18	64	18
Anthracene	(ug/kg)	6.67U	14	6.67U	18	55.3	18
Benzo(a)anthracene	(ug/kg)	28	148	6.67U	100	456	118
Benzo(a)pyrene	(ug/kg)	66	285	10	230	893	237
Benzo(b)fluoranthene	(ug/kg)	62	315	12	311	977	277
Benzo(ghi)perylene	(ug/kg)	75.3	315	11.3	254	794	240
Benzo(k)fluoranthene	(ug/kg)	21.3	78	6.67U	82.7	272	79.3
Chrysene	(ug/kg)	32	204	6.67U	145	597	151
Dibenzo(a,h)anthracene	(ug/kg)	12	54	6.67U	47.3	133	42
Fluoranthene	(ug/kg)	52.7	466	11.3	263	1520	277
Fluorene	(ug/kg)	6.67U	6.67U	6.67U	6.67U	10.7	6.67U
Indeno(1,2,3-cd)pyrene	(ug/kg)	50.7	223	8	185	583	173
Naphthalene	(ug/kg)	6.67U	6.67U	6.67U	14.7	16	12
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	NT	NT
Phenanthrene	(ug/kg)	13.3	130	6.67U	60	437	82
Pyrene	(ug/kg)	75.3	605	15.3	367	2100	387

BZTO104(e)023596

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 3 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	G17-4 G17-4(0-0.5) 09/29/2003 0.50	G17-5 G17-5(0-0.5) 09/29/2003 0.50	G17-6 G17-6(0.0-0.5) 09/29/2003 0.50	G19-3 G19-3(0-0.5) 09/29/2003 0.50	G19-4 G19-4(0-0.5) 09/29/2003 0.50	G19-5 G19-5(0-0.5) 09/29/2003 0.50
Acenaphthene	(ug/kg)	64.7	6.67U	6.67U	18	15.3	6.67U
Acenaphthylene	(ug/kg)	398	11.3	16.7	96	174	8
Anthracene	(ug/kg)	671	14.7	38.7	131	133	6.67U
Benzo(a)anthracene	(ug/kg)	4110	73.3	78	962	1150	54.7
Benzo(a)pyrene	(ug/kg)	6910	163	128	1430	2320	113
Benzo(b)fluoranthene	(ug/kg)	7300	215	194	1480	2590	128
Benzo(ghi)perylene	(ug/kg)	6520	184	187	1330	2730	115
Benzo(k)fluoranthene	(ug/kg)	2120	70.7	52.7	511	770	42
Chrysene	(ug/kg)	5390	109	90.7	1170	1570	68
Dibenzo(a,h)anthracene	(ug/kg)	881	38	44	227	373	21.3
Fluoranthene	(ug/kg)	13900	161	142	2770	3710	103
Fluorene	(ug/kg)	173	6.67U	6.67U	40	28	6.67U
Indeno(1,2,3-cd)pyrene	(ug/kg)	4810	136	144	983	1890	82.7
Naphthalene	(ug/kg)	58.7	6.67U	38	49.3	50.7	16
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	NT	NT
Phenanthrene	(ug/kg)	7560	39.3	70.7	1460	1180	32.7
Pyrene	(ug/kg)	17200	210	160	3750	4890	143

BZTO104(e)023597

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 4 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	G27-4 G27-4(0-0.5) 09/29/2003 0.50	G27-5 G27-5(0-0.5) 09/29/2003 0.50	HB01 HB01(1-1.5) 10/15/2003 1.50	HB01 HB01(5-6) 10/15/2003 6.00	HB01 HB01(10-11) 10/15/2003 11.00	HB01 HB01(14-15) 10/15/2003 15.00
Acenaphthene	(ug/kg)	93.3	8	6.67U	355	442	1010
Acenaphthylene	(ug/kg)	1060	194	8	70.7	76	208
Anthracene	(ug/kg)	1160	120	13.3	156	187	409
Benzo(a)anthracene	(ug/kg)	11100	507	24.7	12.7	14.7	18
Benzo(a)pyrene	(ug/kg)	16800	1060	32	6.67U	6.67U	6.67U
Benzo(b)fluoranthene	(ug/kg)	19800	2070	58	9.33	7.33	10
Benzo(ghi)perylene	(ug/kg)	6000	837	32.7	11.3	6.67U	6.67U
Benzo(k)fluoranthene	(ug/kg)	5950	688	15.3	6.67U	6.67U	6.67U
Chrysene	(ug/kg)	12300	787	82	12	14.7	22
Dibenzo(a,h)anthracene	(ug/kg)	1230	187	10	6.67U	6.67U	6.67U
Fluoranthene	(ug/kg)	23500	1280	37.3	29.3	34	50
Fluorene	(ug/kg)	178	10	7.33	517	655	2180
Indeno(1,2,3-cd)pyrene	(ug/kg)	5280	762	22.7	6.67U	6.67U	6.67U
Naphthalene	(ug/kg)	127	68	22	865	2560	6300
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	NT	NT
Phenanthrene	(ug/kg)	6230	285	37.3	797	1110	3240
Pyrene	(ug/kg)	34100	2270	52	96	88.7	99.3

BZTO104(e)023598

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 5 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	HB02 HB02(1-1.5) 10/15/2003 1.50	HB02 HB02(5-6) 10/15/2003 6.00	HB02 HB02(10-11) 10/15/2003 11.00	HB02 HB02(13-14) 10/15/2003 14.00	HB03 HB03(1-1.5) 10/15/2003 1.50	HB03 HB03(5-6) 10/15/2003 6.00
Acenaphthene	(ug/kg)	6.67U	507	1130J	1480	6.67U	6.67U
Acenaphthylene	(ug/kg)	6.67U	223	440J	483	6.67U	6.67U
Anthracene	(ug/kg)	6.67U	363	653J	793	6.67U	6.67U
Benzo(a)anthracene	(ug/kg)	6.67U	14.7	35.3J	120	16	6.67U
Benzo(a)pyrene	(ug/kg)	6.67U	6.67U	12J	72	6.67U	6.67U
Benzo(b)fluoranthene	(ug/kg)	6.67U	6.67U	14.7J	58.7	6.67U	6.67U
Benzo(ghi)perylene	(ug/kg)	6.67U	6.67U	6.67U	58.7	11.3	6.67U
Benzo(k)fluoranthene	(ug/kg)	6.67U	6.67U	6.67U	20.7	6.67U	6.67U
Chrysene	(ug/kg)	6.67U	21.3	47.3J	147	6.67U	6.67U
Dibenzo(a,h)anthracene	(ug/kg)	6.67U	6.67U	6.67U	14	6.67U	6.67U
Fluoranthene	(ug/kg)	6.67U	33.3	107J	107	6.67U	6.67U
Fluorene	(ug/kg)	6.67U	1530	3160J	3530	6.67U	6.67U
Indeno(1,2,3-cd)pyrene	(ug/kg)	6.67U	6.67U	6.67U	47.3	6.67U	6.67U
Naphthalene	(ug/kg)	6.67U	383	507J	960	6.67U	6.67U
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	NT	NT
Phenanthrene	(ug/kg)	6.67U	2350	4340J	6170	8	6.67U
Pyrene	(ug/kg)	6.67U	207	471J	270	6.67U	6.67U

BZTO104(e)023599

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 6 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	HB03 HB03(10-11) 10/15/2003 11.00	HB04 HB04(1-1.5) 10/15/2003 1.50	HB04 HB04(5-6) 10/15/2003 6.00	HB04 HB04(10-11) 10/15/2003 11.00	HB04 HB04(12-13) 10/15/2003 13.00	HB05 HB05(1-1.5) 10/15/2003 1.50
Acenaphthene	(ug/kg)	656	6.67U	6.67U	6.67U	22.7	6.67U
Acenaphthylene	(ug/kg)	162	6.67U	6.67U	6.67U	82	6.67U
Anthracene	(ug/kg)	312	6.67U	6.67U	6.67U	36	7.33J
Benzo(a)anthracene	(ug/kg)	17.3	6.67U	6.67U	6.67U	30	18J
Benzo(a)pyrene	(ug/kg)	7.33	6.67U	6.67U	6.67U	27.3	6.67U
Benzo(b)fluoranthene	(ug/kg)	10	11.3	6.67U	6.67U	26	9.33J
Benzo(ghi)perylene	(ug/kg)	6.67U	6.67U	6.67U	6.67U	12.7	16J
Benzo(k)fluoranthene	(ug/kg)	6.67U	6.67U	6.67U	6.67U	10.7	6.67U
Chrysene	(ug/kg)	24	6.67U	6.67U	6.67U	25.3	6.67U
Dibenzo(a,h)anthracene	(ug/kg)	6.67U	6.67U	6.67U	6.67U	6.67U	6.67U
Fluoranthene	(ug/kg)	65.3	6.67U	6.67U	6.67U	60	14.7J
Fluorene	(ug/kg)	1220	6.67U	6.67U	11.3	451	13.3J
Indeno(1,2,3-cd)pyrene	(ug/kg)	6.67U	6.67U	6.67U	6.67U	10	6.67U
Naphthalene	(ug/kg)	10600	6.67U	6.67U	6.67U	125	8J
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	NT	NT
Phenanthrene	(ug/kg)	2030	6.67U	6.67U	6.67U	101	16.7J
Pyrene	(ug/kg)	152	6.67U	6.67U	6.67U	101	6.67U

BZTO104(e)023600

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 7 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	HB05 HB05(5-6) 10/15/2003 6.00	HB05 HB05(10-11) 10/15/2003 11.00	LW019S LW19S(16.5-17.5) 09/29/2003 17.50	LW020D LW020D(12-13) 09/30/2003 13.00	LW021S LW21S(13.5-14.5) 10/21/2003 14.50	LW022D LW022D (24-25) 09/24/2003 25.00
Acenaphthene	(ug/kg)	403	588	2240	1140	399	6.67U
Acenaphthylene	(ug/kg)	68	162	963	533	125	6.67U
Anthracene	(ug/kg)	96.7	179	1140	800	175	8
Benzo(a)anthracene	(ug/kg)	21.3	23.3	70.7	78	138	16.7
Benzo(a)pyrene	(ug/kg)	15.3	16.7	13.3	49.3	132	12.7
Benzo(b)fluoranthene	(ug/kg)	12.7	17.3	12.7	54	119	12.7
Benzo(ghi)perylene	(ug/kg)	16.7	11.3	10	24	56	6.67U
Benzo(k)fluoranthene	(ug/kg)	6.67U	6.67U	6.67U	17.3	46	6.67U
Chrysene	(ug/kg)	24	24.7	93.3	81.3	136	14
Dibenzo(a,h)anthracene	(ug/kg)	6.67U	6.67U	6.67U	6.67U	16	6.67U
Fluoranthene	(ug/kg)	43.3	50.7	70	170	139	29.3
Fluorene	(ug/kg)	647	855	5950	4060	813	6.67U
Indeno(1,2,3-cd)pyrene	(ug/kg)	6.67U	6.67U	8.67	20.7	48.7	6.67U
Naphthalene	(ug/kg)	2090	6620	4360	627	6220	6.67U
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	NT	NT
Phenanthrene	(ug/kg)	779	1170	9610	5170	1300	32.7
Pyrene	(ug/kg)	107	121	1250	443	255	38

BZTO104(e)023601

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 8 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	LW023D LW023D22.5-23.5 09/24/2003 23.50	LW024D LW24D(26-27) 10/20/2003 27.00	LW025D LW25D(28-29) 10/20/2003 29.00	LW026D LW026D (15-16) 09/25/2003 16.00	LW027S LW027S13.5-14.5 09/25/2003 14.50	LW027S LW027S (21-22) 09/25/2003 22.00
Acenaphthene	(ug/kg)	6.67U	6.67U	6.67U	513	953	1520
Acenaphthylene	(ug/kg)	8	6.67U	11.3	157	353	470
Anthracene	(ug/kg)	22	10.7	43.3	94.7	170	309
Benzo(a)anthracene	(ug/kg)	41.3	21.3	115	13.3	9.33	68.7
Benzo(a)pyrene	(ug/kg)	31.3	20	101	8.67	6.67U	52.7
Benzo(b)fluoranthene	(ug/kg)	29.3	17.3	88.7	8	6.67U	50
Benzo(ghi)perylene	(ug/kg)	14	9.33	43.3	6.67U	6.67U	26
Benzo(k)fluoranthene	(ug/kg)	11.3	7.33	40	6.67U	6.67U	15.3
Chrysene	(ug/kg)	36.7	20	118J	11.3	12	64
Dibenzo(a,h)anthracene	(ug/kg)	6.67U	6.67U	13.3	6.67U	6.67U	6.67U
Fluoranthene	(ug/kg)	73.3	30.7	169	26	23.3	137
Fluorene	(ug/kg)	6.67U	6.67U	6.67U	1130	2110	2840
Indeno(1,2,3-cd)pyrene	(ug/kg)	12	8	38	6.67U	6.67U	21.3
Naphthalene	(ug/kg)	6.67U	6.67U	6.67U	213	680	983
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	NT	NT
Phenanthrene	(ug/kg)	62.7	21.3	136J	1170	1880	2760
Pyrene	(ug/kg)	94.7	41.3	233J	52.7	49.3	240

BZTO104(e)023602

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 9 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	LW028S LW028S (12-13) 09/23/2003 13.00	LW028S LW028S(12-13) 10/01/2003 13.00	LW029D LW029D (15-16) 09/22/2003 16.00	LW030S LW030S13.5-14.5 09/19/2003 14.50	LW031S LW031S(15-16) 10/01/2003 16.00	LW032D LW032D13.5-14.5 10/02/2003 14.50
Acenaphthene	(ug/kg)	6.67U	6.67U	6.67U	1280	6.67U	251J
Acenaphthylene	(ug/kg)	6.67U	6.67U	6.67U	1490	6.67U	105J
Anthracene	(ug/kg)	6.67U	6.67U	6.67U	545	6.67U	42.7J
Benzo(a)anthracene	(ug/kg)	6.67U	6.67U	6.67U	13.3U	6.67U	7.33J
Benzo(a)pyrene	(ug/kg)	6.67U	6.67U	6.67U	13.3U	6.67U	8J
Benzo(b)fluoranthene	(ug/kg)	6.67U	6.67U	6.67U	13.3U	6.67U	8.67J
Benzo(ghi)perylene	(ug/kg)	6.67U	6.67U	6.67U	13.3U	6.67U	6.67UJ
Benzo(k)fluoranthene	(ug/kg)	6.67U	6.67U	6.67U	13.3U	6.67U	6.67UJ
Chrysene	(ug/kg)	6.67U	6.67U	6.67U	13.3U	6.67U	7.33J
Dibenzo(a,h)anthracene	(ug/kg)	6.67U	6.67U	6.67U	13.3U	6.67U	6.67UJ
Fluoranthene	(ug/kg)	6.67U	6.67U	6.67U	61.3	6.67U	22.7J
Fluorene	(ug/kg)	6.67U	6.67U	6.67U	3330	6.67U	349J
Indeno(1,2,3-cd)pyrene	(ug/kg)	6.67U	6.67U	6.67U	13.3U	6.67U	6.67UJ
Naphthalene	(ug/kg)	6.67U	6.67U	6.67U	624	6.67U	2240J
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	NT	NT
Phenanthrene	(ug/kg)	6.67U	6.67U	6.67U	5290	6.67U	288J
Pyrene	(ug/kg)	6.67U	6.67U	6.67U	171	6.67U	37.3J

BZTO104(e)023603

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 10 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	LW033S LW033S13.5-14.5 10/02/2003 14.50	LW035D LW035(27-28) 10/01/2003 28.00	LW035D LW035(29-29.5) 10/01/2003 29.50	LW035D LW035(30-31) 10/01/2003 31.00	OX005S OX-5s (12-13) 09/17/2003 13.00	OX006S OX-6s (15-16) 09/17/2003 16.00
Acenaphthene	(ug/kg)	6.67UJ	6.67U	6.67U	10.7	NT	NT
Acenaphthylene	(ug/kg)	7.33J	6.67U	10	43.3	NT	NT
Anthracene	(ug/kg)	129J	6.67U	36	78	NT	NT
Benzo(a)anthracene	(ug/kg)	45.3J	14.7	48.7	104	NT	NT
Benzo(a)pyrene	(ug/kg)	67.3J	12.7	49.3	115	NT	NT
Benzo(b)fluoranthene	(ug/kg)	65.3J	14.7	40	94	NT	NT
Benzo(ghi)perylene	(ug/kg)	47.3J	7.33	23.3	66.7	NT	NT
Benzo(k)fluoranthene	(ug/kg)	22.7J	6.67U	14.7	30	NT	NT
Chrysene	(ug/kg)	48J	14	43.3	91.3	NT	NT
Dibenzo(a,h)anthracene	(ug/kg)	6.67UJ	6.67U	6.67U	11.3	NT	NT
Fluoranthene	(ug/kg)	148J	22.7	78	205	NT	NT
Fluorene	(ug/kg)	7.33J	6.67U	6.67U	20.7	NT	NT
Indeno(1,2,3-cd)pyrene	(ug/kg)	30.7J	6.67U	19.3	49.3	NT	NT
Naphthalene	(ug/kg)	6.67UJ	6.67U	6.67U	49.3	NT	NT
Pentachlorophenol	(ug/kg)	NT	NT	NT	NT	333U	576
Phenanthrene	(ug/kg)	107J	14.7	44.7	161	NT	NT
Pyrene	(ug/kg)	165J	28.7	107	270	NT	NT

BZTO104(e)023604

TABLE E-1
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 PAHS AND PENTACHLOROPHENOL (SW8270SIM)
 TIME OIL NORTHWEST TERMINAL

Page: 11 of 11
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	OX007S OX-7s (12-13) 09/16/2003 13.00	OX008D OX-8d13.5-14.5 09/16/2003 14.50	OX008D OX-8d (22-23) 09/16/2003 23.00	OX008S OX-8s13.5-14.5 09/16/2003 14.50
Acenaphthene	(ug/kg)	NT	NT	NT	NT
Acenaphthylene	(ug/kg)	NT	NT	NT	NT
Anthracene	(ug/kg)	NT	NT	NT	NT
Benzo(a)anthracene	(ug/kg)	NT	NT	NT	NT
Benzo(a)pyrene	(ug/kg)	NT	NT	NT	NT
Benzo(b)fluoranthene	(ug/kg)	NT	NT	NT	NT
Benzo(ghi)perylene	(ug/kg)	NT	NT	NT	NT
Benzo(k)fluoranthene	(ug/kg)	NT	NT	NT	NT
Chrysene	(ug/kg)	NT	NT	NT	NT
Dibenzo(a,h)anthracene	(ug/kg)	NT	NT	NT	NT
Fluoranthene	(ug/kg)	NT	NT	NT	NT
Fluorene	(ug/kg)	NT	NT	NT	NT
Indeno(1,2,3-cd)pyrene	(ug/kg)	NT	NT	NT	NT
Naphthalene	(ug/kg)	NT	NT	NT	NT
Pentachlorophenol	(ug/kg)	333U	12900	333U	3220
Phenanthrene	(ug/kg)	NT	NT	NT	NT
Pyrene	(ug/kg)	NT	NT	NT	NT

BZTO104(e)023605

TABLE E-2
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 VOLATILES (SW8260)
 TIME OIL NORTHWEST TERMINAL

Page: 1 of 7
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	HB01 HB01(1-1.5) 10/15/2003 1.50	HB01 HB01(5-6) 10/15/2003 6.00	HB01 HB01(10-11) 10/15/2003 11.00	HB01 HB01(14-15) 10/15/2003 15.00	HB02 HB02(1-1.5) 10/15/2003 1.50	HB02 HB02(5-6) 10/15/2003 6.00
1,2,4-Trimethylbenzene	(ug/kg)	10U	36000J	116000J	141000J	10U	12000J
1,2-Dibromoethane	(ug/kg)	10U	10UJ	10UJ	10UJ	10U	10UJ
1,2-Dichlorobenzene	(ug/kg)	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	(ug/kg)	10U	10UJ	100UJ	100UJ	10U	10UJ
1,3,5-Trimethylbenzene	(ug/kg)	10U	652J	5810J	8290J	10U	1260J
Benzene	(ug/kg)	10U	10UJ	100UJ	136J	10U	36.8J
Ethylbenzene	(ug/kg)	10U	608J	11800J	33600J	10U	212J
Isopropylbenzene	(ug/kg)	10U	657J	6470J	8300J	10U	1370J
m,p-Xylene	(ug/kg)	20U	4330J	89600J	239000J	20U	982J
Methyl tert-butyl ether	(ug/kg)	10U	10UJ	100UJ	100UJ	10U	10UJ
n-Propylbenzene	(ug/kg)	10U	2240J	16200J	21900J	10U	3390J
o-Xylene	(ug/kg)	10U	1680J	35400J	88600J	10U	471J
Toluene	(ug/kg)	10U	196J	1520J	20000J	10U	33.2J

BZTO104(e)023606

TABLE E-2
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 VOLATILES (SW8260)
 TIME OIL NORTHWEST TERMINAL

Page: 2 of 7
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	HB02 HB02(10-11) 10/15/2003 11.00	HB02 HB02(13-14) 10/15/2003 14.00	HB03 HB03(1-1.5) 10/15/2003 1.50	HB03 HB03(5-6) 10/15/2003 6.00	HB03 HB03(10-11) 10/15/2003 11.00	HB04 HB04(1-1.5) 10/15/2003 1.50
1,2,4-Trimethylbenzene	(ug/kg)	22J	16.9J	10U	10U	151000	10UJ
1,2-Dibromoethane	(ug/kg)	10UJ	10UJ	10U	10U	10U	10UJ
1,2-Dichlorobenzene	(ug/kg)	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	(ug/kg)	10UJ	10UJ	10U	10U	100U	10UJ
1,3,5-Trimethylbenzene	(ug/kg)	1710J	2420J	10U	10U	8130	10UJ
Benzene	(ug/kg)	85.7J	94.2J	10U	10U	100U	10UJ
Ethylbenzene	(ug/kg)	57.4J	56.3J	10U	10U	39000	10UJ
Isopropylbenzene	(ug/kg)	1930J	2720J	10U	10U	8930	10UJ
m,p-Xylene	(ug/kg)	194J	332J	30.4	20U	182000	20UJ
Methyl tert-butyl ether	(ug/kg)	10UJ	10UJ	10U	10U	100U	10UJ
n-Propylbenzene	(ug/kg)	3820J	5630J	10U	10U	28800	10UJ
o-Xylene	(ug/kg)	94.1J	114J	10U	10U	112000	10UJ
Toluene	(ug/kg)	62.5J	225J	10U	10U	1780	10UJ

BZTO104(e)023607

TABLE E-2
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 VOLATILES (SW8260)
 TIME OIL NORTHWEST TERMINAL

Page: 3 of 7
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	HB04 HB04(5-6) 10/15/2003 6.00	HB04 HB04(10-11) 10/15/2003 11.00	HB04 HB04(12-13) 10/15/2003 13.00	HB05 HB05(1-1.5) 10/15/2003 1.50	HB05 HB05(5-6) 10/15/2003 6.00	HB05 HB05(10-11) 10/15/2003 11.00
1,2,4-Trimethylbenzene	(ug/kg)	10UJ	10U	15.7J	10U	153000J	114000J
1,2-Dibromoethane	(ug/kg)	10UJ	10U	10UJ	10U	10UJ	10UJ
1,2-Dichlorobenzene	(ug/kg)	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	(ug/kg)	10UJ	10U	10UJ	10U	10UJ	10UJ
1,3,5-Trimethylbenzene	(ug/kg)	10UJ	10U	1090J	10U	3890J	5130J
Benzene	(ug/kg)	10UJ	10U	10UJ	10U	21J	5290J
Ethylbenzene	(ug/kg)	10UJ	10U	10UJ	10U	11400J	26800J
Isopropylbenzene	(ug/kg)	10UJ	10U	1420J	10U	4240J	5270J
m,p-Xylene	(ug/kg)	20UJ	20U	44.8J	29.1	99400J	182000J
Methyl tert-butyl ether	(ug/kg)	10UJ	10U	10UJ	10U	10UJ	10UJ
n-Propylbenzene	(ug/kg)	10UJ	10U	1600J	10U	20000J	16000J
o-Xylene	(ug/kg)	10UJ	10U	30.4J	10.2	41900J	67900J
Toluene	(ug/kg)	10UJ	10U	20.5J	10U	3230J	64900J

BZTO104(e)023608

TABLE E-2
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 VOLATILES (SW8260)
 TIME OIL NORTHWEST TERMINAL

Page: 4 of 7
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	LW019S LW19S(16.5-17.5) 09/29/2003 17.50	LW020D LW020D(12-13) 09/30/2003 13.00	LW021S LW21S(13.5-14.5) 10/21/2003 14.50	LW022D LW022D (24-25) 09/24/2003 25.00	LW023D LW023D22.5-23.5 09/24/2003 23.50	LW024D LW24D(26-27) 10/20/2003 27.00
1,2,4-Trimethylbenzene	(ug/kg)	10U	10UJ	73800J	NT	NT	10U
1,2-Dibromoethane	(ug/kg)	10U	10UJ	100UJ	10U	10U	10U
1,2-Dichlorobenzene	(ug/kg)	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	(ug/kg)	10U	10UJ	100UJ	10U	10U	10U
1,3,5-Trimethylbenzene	(ug/kg)	10U	1110J	6830J	NT	NT	10U
Benzene	(ug/kg)	10U	10UJ	254J	NT	NT	10U
Ethylbenzene	(ug/kg)	10U	10UJ	16500J	NT	NT	10U
Isopropylbenzene	(ug/kg)	2050J	1160J	7880J	NT	NT	10U
m,p-Xylene	(ug/kg)	20U	20UJ	68800J	NT	NT	20U
Methyl tert-butyl ether	(ug/kg)	10U	10UJ	100UJ	10U	10U	10U
n-Propylbenzene	(ug/kg)	4900J	2520J	17800J	NT	NT	10U
o-Xylene	(ug/kg)	10U	42J	16200J	NT	NT	10U
Toluene	(ug/kg)	10U	10UJ	676J	NT	NT	10U

BZTO104(e)023609

TABLE E-2
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 VOLATILES (SW8260)
 TIME OIL NORTHWEST TERMINAL

Page: 5 of 7
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	LW025D LW25D(28-29) 10/20/2003 29.00	LW026D LW026D (15-16) 09/25/2003 16.00	LW027S LW027S13.5-14.5 09/25/2003 14.50	LW027S LW027S (21-22) 09/25/2003 22.00	LW028S LW028S (12-13) 09/23/2003 13.00	LW028S LW028S(12-13) 10/01/2003 13.00
1,2,4-Trimethylbenzene	(ug/kg)	10UJ	23.7J	15.6J	12.9J	NT	10U
1,2-Dibromoethane	(ug/kg)	10UJ	10U	10U	10U	10U	10U
1,2-Dichlorobenzene	(ug/kg)	NT	NT	NT	NT	NT	NT
1,2-Dichloroethane	(ug/kg)	10UJ	10U	10U	10U	10U	10U
1,3,5-Trimethylbenzene	(ug/kg)	10UJ	1040J	832J	1050J	NT	10U
Benzene	(ug/kg)	10UJ	44.5J	10U	10U	NT	10U
Ethylbenzene	(ug/kg)	10UJ	10U	10U	10U	NT	10U
Isopropylbenzene	(ug/kg)	10UJ	1000J	835J	1110J	NT	10U
m,p-Xylene	(ug/kg)	20UJ	84.6J	38.2	20U	NT	20U
Methyl tert-butyl ether	(ug/kg)	10UJ	10U	10U	10U	10U	10U
n-Propylbenzene	(ug/kg)	10UJ	1430J	1170J	1260J	NT	10U
o-Xylene	(ug/kg)	10UJ	66J	10U	10U	NT	10U
Toluene	(ug/kg)	10UJ	29.9J	14.5J	18.3J	NT	10U

BZTO104(e)023610

TABLE E-2
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 VOLATILES (SW8260)
 TIME OIL NORTHWEST TERMINAL

Page: 6 of 7
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	LW029D LW029D (15-16) 09/22/2003 16.00	LW030S LW030S13.5-14.5 09/19/2003 14.50	LW031S LW031S(15-16) 10/01/2003 16.00	LW032D LW032D13.5-14.5 10/02/2003 14.50	LW033S LW033S13.5-14.5 10/02/2003 14.50	LW035D LW035(27-28) 10/01/2003 28.00
1,2,4-Trimethylbenzene	(ug/kg)	NT	NT	10U	10U	10U	10U
1,2-Dibromoethane	(ug/kg)	10U	10U	10U	10U	10U	10U
1,2-Dichlorobenzene	(ug/kg)	NT	NT	NT	100U	NT	NT
1,2-Dichloroethane	(ug/kg)	10U	10U	10U	10U	10U	10U
1,3,5-Trimethylbenzene	(ug/kg)	NT	NT	10U	860J	10U	10U
Benzene	(ug/kg)	NT	NT	10U	10U	10U	10U
Ethylbenzene	(ug/kg)	NT	NT	10U	10U	10U	10U
Isopropylbenzene	(ug/kg)	NT	NT	10U	773J	10U	10U
m,p-Xylene	(ug/kg)	NT	NT	20U	20U	20U	20U
Methyl tert-butyl ether	(ug/kg)	10U	10U	10U	10U	10U	10U
n-Propylbenzene	(ug/kg)	NT	NT	10U	1750J	10U	10U
o-Xylene	(ug/kg)	NT	NT	10U	10U	10U	10U
Toluene	(ug/kg)	NT	NT	10U	13.6	10U	10U

BZTO104(e)023611

TABLE E-2
 PHASE III REMEDIAL INVESTIGATION
 SOIL ANALYTICAL RESULTS
 VOLATILES (SW8260)
 TIME OIL NORTHWEST TERMINAL

Page: 7 of 7
 Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
 SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	LW035D LW035(29-29.5) 10/01/2003 29.50	LW035D LW035(30-31) 10/01/2003 31.00
1,2,4-Trimethylbenzene	(ug/kg)	10U	10U
1,2-Dibromoethane	(ug/kg)	10U	10U
1,2-Dichlorobenzene	(ug/kg)	NT	NT
1,2-Dichloroethane	(ug/kg)	10U	10U
1,3,5-Trimethylbenzene	(ug/kg)	10U	10U
Benzene	(ug/kg)	10U	10U
Ethylbenzene	(ug/kg)	10U	10U
Isopropylbenzene	(ug/kg)	10U	10U
m,p-Xylene	(ug/kg)	20U	20U
Methyl tert-butyl ether	(ug/kg)	10U	10U
n-Propylbenzene	(ug/kg)	10U	10U
o-Xylene	(ug/kg)	10U	10U
Toluene	(ug/kg)	10U	10U

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Date: 04/29/2004

CONSTITUENT	SITE	HB01	HB01	HB01	HB01	HB02	HB02
	SAMPLE ID	HB01(1-1.5)	HB01(5-6)	HB01(10-11)	HB01(14-15)	HB02(1-1.5)	HB02(5-6)
	DATE	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003
	DEPTH (ft)	1.50	6.00	11.00	15.00	1.50	6.00
Diesel	(mg/kg)	33.9	2710J	4020J	10100J	97.4	7170J
Gasoline	(mg/kg)	32.4	2540	3280	6880	2.68U	1540J
TPH Motor Oil Range	(mg/kg)	56.4U	109J	83MJ	588U	63.6	280MJ

BZTO104(e)023613

TABLE E-3
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS (ORDEQ-TPH)
TIME OIL NORTHWEST TERMINAL

Page: 2 of 7
Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	HB02 HB02(10-11) 10/15/2003 11.00	HB02 HB02(13-14) 10/15/2003 14.00	HB03 HB03(1-1.5) 10/15/2003 1.50	HB03 HB03(5-6) 10/15/2003 6.00	HB03 HB03(10-11) 10/15/2003 11.00	HB04 HB04(1-1.5) 10/15/2003 1.50
Diesel	(mg/kg)	12000J	13100J	681	159	5250J	31.6
Gasoline	(mg/kg)	1830J	2670	2.78U	3.43	8560	5.7
TPH-Motor Oil Range	(mg/kg)	585U	561U	229M	70.7M	218MJ	53.6U

BZTO104(e)023614

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Date: 04/29/2004

CONSTITUENT	SITE	HB04	HB04	HB04	HB05	HB05	HB05
	SAMPLE ID	HB04(5-6)	HB04(10-11)	HB04(12-13)	HB05(1-1.5)	HB05(5-6)	HB05(10-11)
	DATE	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003
	DEPTH (ft)	6.00	11.00	13.00	1.50	6.00	11.00
Diesel	(mg/kg)	16.9U	893J	2430J	2330J	2200	5910J
Gasoline	(mg/kg)	121	10.1	1330J	32.8	8120	3070
TPH-Motor Oil Range	(mg/kg)	56.2U	190MJ	117MJ	429MJ	83.3M	101MJ

BZTO104(e)023615

TABLE E-3
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS (ORDEQ-TPH)
TIME OIL NORTHWEST TERMINAL

Page: 4 of 7
Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	LW019S	LW020D	LW021S	LW022D	LW023D	LW024D
	SAMPLE ID	LW19S(16.5-17.5)	LW020D(12-13)	LW21S(13.5-14.5)	LW022D (24-25)	LW023D22.5-23.5	LW24D(26-27)
	DATE	09/29/2003	09/30/2003	10/21/2003	09/24/2003	09/24/2003	10/20/2003
	DEPTH (ft)	17.50	13.00	14.50	25.00	23.50	27.00
Diesel	(mg/kg)	36100J	13700J	6290J	16.6U	16.6U	20.2
Gasoline	(mg/kg)	2310	2310	8920J	2.76U	2.76U	3.22U
TPH-Motor Oil Range	(mg/kg)	63.8U	611U	642U	55.2U	55.3U	64.4U

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Date: 04/29/2004

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	LW025D LW25D(28-29) 10/20/2003 29.00	LW026D LW026D (15-16) 09/25/2003 16.00	LW027S LW027S13.5-14.5 09/25/2003 14.50	LW027S LW027S (21-22) 09/25/2003 22.00	LW028S LW028S (12-13) 09/23/2003 13.00	LW028S LW028S(12-13) 10/01/2003 13.00
Diesel	(mg/kg)	18.7U	12500J	9000J	9790J	17.9U	18.1U
Gasoline	(mg/kg)	3.12U	2270J	4190J	5010J	2.98U	3.66
TPH-Motor Oil Range	(mg/kg)	62.4U	64.5U	59.5U	56.9U	59.7U	60.5U

BZTO104(e)023617

TABLE E-3
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
TOTAL PETROLEUM HYDROCARBONS (ORDEQ-TPH)
TIME OIL NORTHWEST TERMINAL

Page: 6 of 7
Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive

SAMPLE TYPE: Soil

CONSTITUENT	SITE SAMPLE ID DATE DEPTH (ft)	LW029D LW029D (15-16) 09/22/2003 16.00	LW030S LW030S13.5-14.5 09/19/2003 14.50	LW031S LW031S(15-16) 10/01/2003 16.00	LW032D LW032D13.5-14.5 10/02/2003 14.50	LW033S LW033S13.5-14.5 10/02/2003 14.50	LW035D LW035(27-28) 10/01/2003 28.00
Diesel	(mg/kg)	18.1U	6260J	18.4U	6450	82.4	16.5U
Gasoline	(mg/kg)	3.02U	1880J	3.07U	4200J	3.16U	12.7
TPH-Motor Oil Range	(mg/kg)	60.4U	55U	61.3U	57.6U	175	54.9U

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Date: 04/29/2004

	SITE	LW035D	LW035D
	SAMPLE ID	LW035(29-29.5)	LW035(30-31)
CONSTITUENT	DATE	10/01/2003	10/01/2003
	DEPTH (ft)	29.50	31.00
Diesel	(mg/kg)	19.7U	44.3
Gasoline	(mg/kg)	7.28	5.07
TPH-Motor Oil Range	(mg/kg)	65.8U	92.3

BZTO104(e)023619

TABLE E-4
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
METALS (SW6010)
TIME OIL NORTHWEST TERMINAL

Page: 1 of 9
Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive

SAMPLE TYPE: Soil

CONSTITUENT	SITE	G07-3	G07-4	G07-5	G10-4	G10-5	G11-3
	SAMPLE ID	G7-3(0-0.5)	G7-4(0-0.5)	G7-5(0-0.5)	G10-4(0-0.5)	G10-5(0.0-0.5)	G11-3(0-0.5)
	DATE	09/29/2003	09/29/2003	09/29/2003	09/29/2003	09/29/2003	09/29/2003
	DEPTH (ft)	0.50	0.50	0.50	0.50	0.50	0.50
Lead	(mg/kg)	18.8	5.07	5.87	19.7	1.85U	1.85U
Zinc	(mg/kg)	97.9	70.3	102	68.9	57.7	86.6

BZTO104(e)023620

TABLE E-4
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
METALS (SW6010)
TIME OIL NORTHWEST TERMINAL

Page: 2 of 9
Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	G11-3	G15-4	G15-5	G15-6	G17-4	G17-5
	SAMPLE ID	G11-3(1.0-1.5)	G15-4(0-0.5)	G15-5(0-0.5)	G15-6(0-0.5)	G17-4(0-0.5)	G17-5(0-0.5)
	DATE	09/29/2003	09/29/2003	09/29/2003	09/29/2003	09/29/2003	09/29/2003
	DEPTH (ft)	1.50	0.50	0.50	0.50	0.50	0.50
Lead	(mg/kg)	1.67U	16.3	76.5	12.7	43	11.9J
Zinc	(mg/kg)	52.1	77.7	73	63.9	148	80.8J

BZTO104(e)023621

TABLE E-4
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
METALS (SW6010)
TIME OIL NORTHWEST TERMINAL

Page: 3 of 9
Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	G17-6	G19-3	G19-4	G19-5	HB01	HB01
	SAMPLE ID	G17-6(0.0-0.5)	G19-3(0-0.5)	G19-4(0-0.5)	G19-5(0-0.5)	HB01(1-1.5)	HB01(5-6)
	DATE	09/29/2003	09/29/2003	09/29/2003	09/29/2003	10/15/2003	10/15/2003
	DEPTH (ft)	0.50	0.50	0.50	0.50	1.50	6.00
Lead	(mg/kg)	28	158	236	6.96	53.2	29.1
Zinc	(mg/kg)	410	87.1	197	228	199	43.8

BZTO104(e)023622

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Date: 04/29/2004

SAMPLE TYPE: Soil

CONSTITUENT	SITE	HB01	HB01	HB02	HB02	HB02	HB02
	SAMPLE ID	HB01(10-11)	HB01(14-15)	HB02(1-1.5)	HB02(5-6)	HB02(10-11)	HB02(13-14)
	DATE	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003
	DEPTH (ft)	11.00	15.00	1.50	6.00	11.00	14.00
Lead	(mg/kg)	37.1	3.22	1.56U	1.45U	1.61U	1.43U
Zinc	(mg/kg)	42.5	47.7	56.1	39.1	50.1	40.1

BZTO104(e)023623

TABLE E-4
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
METALS (SW6010)
TIME OIL NORTHWEST TERMINAL

Page: 5 of 9
Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	HB03	HB03	HB03	HB04	HB04	HB04
	SAMPLE ID	HB03(1-1.5)	HB03(5-6)	HB03(10-11)	HB04(1-1.5)	HB04(5-6)	HB04(10-11)
	DATE	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003	10/15/2003
	DEPTH (ft)	1.50	6.00	11.00	1.50	6.00	11.00
Lead	(mg/kg)	2.99	3.58	2.05	1.61U	1.67U	1.64U
Zinc	(mg/kg)	70	45.4	44.8	51	48.4	45.4

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Date: 04/29/2004

CONSTITUENT	SITE	HB04	HB05	HB05	HB05	LW019S	LW020D
	SAMPLE ID	HB04(12-13)	HB05(1-1.5)	HB05(5-6)	HB05(10-11)	LW19S(16.5-17.5)	LW020D(12-13)
	DATE	10/15/2003	10/15/2003	10/15/2003	10/15/2003	09/29/2003	09/30/2003
	DEPTH (ft)	13.00	1.50	6.00	11.00	17.50	13.00
Lead	(mg/kg)	1.56U	28.9	1.61U	1.64U	2.28U	2.44U
Zinc	(mg/kg)	43.2	55.9	44.9	45	NT	NT

BZTO104(e)023625

TABLE E-4
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
METALS (SW6010)
TIME OIL NORTHWEST TERMINAL

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Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	LW021S	LW022D	LW023D	LW024D	LW025D	LW026D
	SAMPLE ID	LW21S(13.5-14.5)	LW022D (24-25)	LW023D22.5-23.5	LW24D(26-27)	LW25D(28-29)	LW026D (15-16)
	DATE	10/21/2003	09/24/2003	09/24/2003	10/20/2003	10/20/2003	09/25/2003
	DEPTH (ft)	14.50	25.00	23.50	27.00	29.00	16.00
Lead	(mg/kg)	1.61U	4.49J	1.92UJ	1.67U	1.79U	1.85U
Zinc	(mg/kg)	NT	NT	NT	NT	NT	NT

BZTO104(e)023626

TABLE E-4
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
METALS (SW6010)
TIME OIL NORTHWEST TERMINAL

Page: 8 of 9
Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	LW027S	LW027S	LW028S	LW028S	LW029D	LW030S
	SAMPLE ID	LW027S13.5-14.5	LW027S (21-22)	LW028S (12-13)	LW028S(12-13)	LW029D (15-16)	LW030S13.5-14.5
	DATE	09/25/2003	09/25/2003	09/23/2003	10/01/2003	09/22/2003	09/19/2003
	DEPTH (ft)	14.50	22.00	13.00	13.00	16.00	14.50
Lead	(mg/kg)	1.72U	1.72U	1.67UJ	2.42U	1.85UJ	1.79U
Zinc	(mg/kg)	NT	NT	NT	NT	NT	NT

BZTO104(e)023627

TABLE E-4
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
METALS (SW6010)
TIME OIL NORTHWEST TERMINAL

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Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive
SAMPLE TYPE: Soil

CONSTITUENT	SITE	LW031S	LW032D	LW033S	LW035D	LW035D	LW035D
	SAMPLE ID	LW031S(15-16)	LW032D13.5-14.5	LW033S13.5-14.5	LW035(27-28)	LW035(29-29.5)	LW035(30-31)
	DATE	10/01/2003	10/02/2003	10/02/2003	10/01/2003	10/01/2003	10/01/2003
	DEPTH (ft)	16.00	14.50	14.50	28.00	29.50	31.00
Lead	(mg/kg)	2.45U	1.67U	2.25U	2.2U	2.63U	4.38
Zinc	(mg/kg)	NT	NT	NT	NT	NT	NT

BZTO104(e)023628

TABLE E-5
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS
BETX (SW8021)
TIME OIL NORTHWEST TERMINAL

Page: 1 of 1
Date: 04/29/2004

PERIOD: From 09/16/2003 thru 10/21/2003 - Inclusive

SAMPLE TYPE: Soil

CONSTITUENT	SITE	LW022D	LW023D	LW028S	LW029D	LW030S
	SAMPLE ID	LW022D (24-25)	LW023D22.5-23.5	LW028S (12-13)	LW029D (15-16)	LW030S13.5-14.5
	DATE	09/24/2003	09/24/2003	09/23/2003	09/22/2003	09/19/2003
	DEPTH (ft)	25.00	23.50	13.00	16.00	14.50
Benzene	(mg/kg)	0.0276U	0.0276U	0.0298U	0.0302U	0.0275U
Ethylbenzene	(mg/kg)	0.11U	0.111U	0.119U	0.121U	0.759
Toluene	(mg/kg)	0.11U	0.111U	0.119U	0.121U	0.304
Xylene (total)	(mg/kg)	0.331U	0.332U	0.358U	0.362U	3.21

BZTO104(e)023629

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW036D	LW037D	LW038D	LW039D	LW040S	LW041S	LW041S	LW041S	LW042S
Depth (ft):	(7-8)	(6-7)	(7-8)	(5-6)	(21-21.5)	(0-0.5)	(1-1.5)	(16-17)	(0-0.5)
Lab ID:	0411033-04	0411033-05	0411033-06	0411033-07	0411033-02	0410156-02	0410156-03	0410156-05	0410156-06
Date Collected:	11/02/2004	11/02/2004	11/02/2004	11/03/2004	11/01/2004	10/28/2004	10/28/2004	10/28/2004	10/23/2004
TOTAL METALS (mg/kg)									
Method 6010									
Arsenic	1.75 U	1.59 U	1.69 U	1.52 U	1.61 U	1.52 U	1.72 U	2.21	1.72 U
Chromium	13.5	11.9	14.7	11.8	12.8	14.2	14.7	13	18.5
Copper	11.3	10.4	10.2	9.97	12.3	23.9	11.7	11.2	20.4
Lead	1.75 U	1.59 U	1.69 U	1.52 U	1.61 U	1.52 U	1.72 U	1.61 U	14.1
Nickel	13.4	12.1	13.4	14.4	14.5	37.2	16.4	12.1	23.5
Zinc	46.7	45.2	40.1	41.2	50	74	46.2	44.1	72.4
DIESEL RANGE									
HYDROCARBONS (mg/kg)									
NWTPH-DX									
Diesel Range Hydrocarbons	18.8 U	19.1 U	19.5 U	20.2 U	17.4 U	16.4 U	16.5 U	16.8 U	17.2 U
TPH-Motor Oil Range	62.5 U	63.6 U	64.9 U	155	57.9 U	63.3	54.8 U	56 U	57.5 U
GASOLINE RANGE									
HYDROCARBONS (mg/kg)									
NWTPH-G									
Gasoline Range Hydrocarbons	3.12 U	3.18 U	3.24 U	3.36 U	2.89 U	2.74 U	2.74 U	2.8 U	2.87 U
SEMIVOLATILES (µg/L)									
Method 8270									
1,2,4-Trichlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
1,2-Dichlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
1,3-Dichlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
1,4-Dichlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
2,4,5-Trichlorophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2,4,6-Trichlorophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2,4-Dichlorophenol	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
2,4-Dimethylphenol	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
2,4-Dinitrophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2,4-Dinitrotoluene	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2,6-Dinitrotoluene	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2-Chloronaphthalene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
2-Chlorophenol	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW036D	LW037D	LW038D	LW039D	LW040S	LW041S	LW041S	LW041S	LW042S
Depth (ft):	(7-8)	(6-7)	(7-8)	(5-6)	(21-21.5)	(0-0.5)	(1-1.5)	(16-17)	(0-0.5)
Lab ID:	0411033-04	0411033-05	0411033-06	0411033-07	0411033-02	0410156-02	0410156-03	0410156-05	0410156-06
Date Collected:	11/02/2004	11/02/2004	11/02/2004	11/03/2004	11/01/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004
2-Methylnaphthalene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
2-Methylphenol	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
2-Nitroaniline	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2-Nitrophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
3- & 4-Methylphenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
3,3-Dichlorobenzidine	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
3-Nitroaniline	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
4,6-Dinitro-2-Methylphenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
4-Bromophenyl-phenylether	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
4-Chloro-3-methylphenol	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
4-Chloroaniline	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
4-Chlorophenylphenyl ether	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
4-Nitroaniline	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
4-Nitrophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
Acenaphthene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Acenaphthylene	66.7 U	66.7 U	66.7 U	112	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Anthracene	66.7 U	66.7 U	66.7 U	355	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Benzo(a)anthracene	66.7 U	66.7 U	66.7 U	668	66.7 U	179	66.7 U	66.7 U	71.7
Benzo(a)pyrene	66.7 U	66.7 U	66.7 U	585	66.7 U	269	66.7 U	66.7 U	119
Benzo(b)fluoranthene	66.7 U	66.7 U	66.7 U	517	66.7 U	331	66.7 U	66.7 U	156
Benzo(g,h,i)perylene	66.7 U	66.7 U	66.7 U	157	66.7 U	228	66.7 U	66.7 U	78.7
Benzo(k)fluoranthene	66.7 U	66.7 U	66.7 U	187	66.7 U	95.7	66.7 U	66.7 U	66.7 U
Benzoic acid	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Benzyl alcohol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
Bis(2-chloroethoxy)methane	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Bis-(2-Chloroethyl) Ether	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Bis(2-chloroethyl)ether	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Bis(2-chloroisopropyl)ether	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Bis(2-ethylhexyl)phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	190	66.7 U
Butyl benzyl phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Carbazole	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Chrysene	66.7 U	66.7 U	66.7 U	655	66.7 U	211	66.7 U	66.7 U	83
Dibenzo(a,h)anthracene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Dibenzofuran	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Diethyl phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW036D	LW037D	LW038D	LW039D	LW040S	LW041S	LW041S	LW041S	LW042S
Depth (ft):	(7-8)	(6-7)	(7-8)	(5-6)	(21-21.5)	(0-0.5)	(1-1.5)	(16-17)	(0-0.5)
Lab ID:	0411033-04	0411033-05	0411033-06	0411033-07	0411033-02	0410156-02	0410156-03	0410156-05	0410156-06
Date Collected:	11/02/2004	11/02/2004	11/02/2004	11/03/2004	11/01/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004
Dimethyl phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Di-n-butyl phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Di-n-octyl phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Fluoranthene	66.7 U	66.7 U	66.7 U	775	66.7 U	399	87.7	66.7 U	169
Fluorene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Hexachlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Hexachlorobutadiene	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Hexachlorocyclopentadiene	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
Hexachloroethane	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Indeno(1,2,3-cd)pyrene	66.7 U	66.7 U	66.7 U	160	66.7 U	168	66.7 U	66.7 U	66.7 U
Isophorone	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Naphthalene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Nitrobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
N-Nitrosodimethylamine	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
N-Nitroso-Di-N-Propylamine	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
N-Nitrosodiphenylamine	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Pentachlorophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
Phenanthrene	66.7 U	66.7 U	66.7 U	674	66.7 U	143	66.7 U	66.7 U	66.7 U
Phenol	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Pyrene	66.7 U	66.7 U	66.7 U	1090	66.7 U	580	101	66.7 U	267
VOLATILES (µg/L)									
Method 8260B									
1,1,1,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,1-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1,2-Trichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,1-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,3-Trichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2,4-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW036D	LW037D	LW038D	LW039D	LW040S	LW041S	LW041S	LW041S	LW042S
Depth (ft):	(7-8)	(6-7)	(7-8)	(5-6)	(21-21.5)	(0-0.5)	(1-1.5)	(16-17)	(0-0.5)
Lab ID:	0411033-04	0411033-05	0411033-06	0411033-07	0411033-02	0410156-02	0410156-03	0410156-05	0410156-06
Date Collected:	11/02/2004	11/02/2004	11/02/2004	11/03/2004	11/01/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004
1,2-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3,5-Trimethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,3-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
1,4-Dichlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2,2-Dichloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Butanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
2-Hexanone	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Chlorotoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Isopropyltoluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
4-Methyl-2-Pentanone (MIBK)	NA	NA	NA	NA	NA	NA	NA	NA	NA
Acetone	NA	NA	NA	NA	NA	NA	NA	NA	NA
Benzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromodichloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromoform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon disulfide	NA	NA	NA	NA	NA	NA	NA	NA	NA
Carbon tetrachloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlorobenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloroform	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
cis-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromochloropropane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dibromomethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dichlorodifluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Ethylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Hexachlorobutadiene	NA	NA	NA	NA	NA	NA	NA	NA	NA

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW036D	LW037D	LW038D	LW039D	LW040S	LW041S	LW041S	LW041S	LW042S
Depth (ft):	(7-8)	(6-7)	(7-8)	(5-6)	(21-21.5)	(0-0.5)	(1-1.5)	(16-17)	(0-0.5)
Lab ID:	0411033-04	0411033-05	0411033-06	0411033-07	0411033-02	0410156-02	0410156-03	0410156-05	0410156-06
Date Collected:	11/02/2004	11/02/2004	11/02/2004	11/03/2004	11/01/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004
Isopropylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
m,p-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methyl tert-butyl ether	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methylene chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Naphthalene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
n-Propylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
o-Xylene	NA	NA	NA	NA	NA	NA	NA	NA	NA
sec-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Styrene	NA	NA	NA	NA	NA	NA	NA	NA	NA
tert-Butylbenzene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Tetrachloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toluene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,2-Dichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
trans-1,3-Dichloropropene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	NA	NA	NA	NA	NA	NA	NA	NA	NA
Trichlorofluoromethane	NA	NA	NA	NA	NA	NA	NA	NA	NA
Vinyl Chloride	NA	NA	NA	NA	NA	NA	NA	NA	NA
Percent Moisture	20	21.4	22.9	25.7	13.6	8.61	8.84	10.7	13

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW042S	LW042S	LW042S	LW043S	LW043S	LW043S	LW044S	LW044S	LW044S	LW045D
Depth (ft):	(1-1.5)	(5-5.5)	(13-14)	(0-0.5)	(1-1.5)	(13-14)	(0-0.5)	(1-1.5)	(12.5-13.5)	(27-28)
Lab ID:	0410156-07	0410156-08	0410156-09	0410156-10	0410156-11	0410156-13	0410156-14	0410156-15	0410156-17	0411033-03
Date Collected:	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	11/01/2004
TOTAL METALS (mg/kg)										
Method 6010										
Arsenic	1.52 U	NA	1.61 U	1.72 U	1.56 U	1.56 U	1.72 U	1.72 U	1.79 U	1.59 U
Chromium	26.3	NA	12.4	146	29.2	12.9	89.7	14.3	12.1	14.4
Copper	21.7	NA	10.8	35.7	19.3	12.2	19.7	11.8	11.8	11.7
Lead	33	NA	1.61 U	141	16.6	1.56 U	55.6	1.72 U	1.79 U	1.59 U
Nickel	18.3	NA	12.1	40.5	18.5	14.4	43.4	15	12.8	16.1
Zinc	106	NA	42.2	156	91.9	47.3	158	49.3	43.8	45.8
DIESEL RANGE										
HYDROCARBONS (mg/kg)										
NWTPH-DX										
Diesel Range Hydrocarbons	66	16.5 U	4750	44.9	36.5	15100	17 U	16.7 U	3500	19 U
TPH-Motor Oil Range	221	55 U	54.5 U	79.5	56.6 U	293 U	56.6 U	55.5 U	59 U	63.2 U
GASOLINE RANGE										
HYDROCARBONS (mg/kg)										
NWTPH-G										
Gasoline Range Hydrocarbons	2.84 U	NA	705	18.2	3.54	2330	48.1	8.44	10800	3.16 U
SEMIVOLATILES (µg/L)										
Method 8270										
1,2,4-Trichlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
1,2-Dichlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
1,3-Dichlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
1,4-Dichlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
2,4,5-Trichlorophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2,4,6-Trichlorophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2,4-Dichlorophenol	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
2,4-Dimethylphenol	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
2,4-Dinitrophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2,4-Dinitrotoluene	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2,6-Dinitrotoluene	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2-Chloronaphthalene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
2-Chlorophenol	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW042S	LW042S	LW042S	LW043S	LW043S	LW043S	LW044S	LW044S	LW044S	LW045D
Depth (ft):	(1-1.5)	(5-5.5)	(13-14)	(0-0.5)	(1-1.5)	(13-14)	(0-0.5)	(1-1.5)	(12.5-13.5)	(27-28)
Lab ID:	0410156-07	0410156-08	0410156-09	0410156-10	0410156-11	0410156-13	0410156-14	0410156-15	0410156-17	0411033-03
Date Collected:	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	11/01/2004
2-Methylnaphthalene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
2-Methylphenol	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
2-Nitroaniline	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
2-Nitrophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
3- & 4-Methylphenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
3,3-Dichlorobenzidine	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
3-Nitroaniline	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
4,6-Dinitro-2-Methylphenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
4-Bromophenyl-phenylether	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
4-Chloro-3-methylphenol	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
4-Chloroaniline	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U	200 U
4-Chlorophenylphenyl ether	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
4-Nitroaniline	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
4-Nitrophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
Acenaphthene	67	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Acenaphthylene	368	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Anthracene	471	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Benzo(a)anthracene	3180	66.7 U	66.7 U	201	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Benzo(a)pyrene	5010	66.7 U	66.7 U	295	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Benzo(b)fluoranthene	5820	66.7 U	66.7 U	393	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Benzo(g,h,i)perylene	2200	66.7 U	66.7 U	203	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Benzo(k)fluoranthene	1550	66.7 U	66.7 U	117	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Benzoic acid	667 U	667 U	667 U	667 U	667 U	667 U	667 U	667 U	667 U	667 U
Benzyl alcohol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
Bis(2-chloroethoxy)methane	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Bis-(2-Chloroethyl) Ether	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Bis(2-chloroethyl)ether	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Bis(2-chloroisopropyl)ether	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Bis(2-ethylhexyl)phthalate	66.7 U	66.7 U	66.7 U	70	66.7 U	66.7 U	66.7 U	66.7 U	159	66.7 U
Butyl benzyl phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Carbazole	81.7	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Chrysene	4090	66.7 U	66.7 U	235	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Dibenzo(a,h)anthracene	479	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Dibenzofuran	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Diethyl phthalate	66.7 U	331 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW042S	LW042S	LW042S	LW043S	LW043S	LW043S	LW044S	LW044S	LW044S	LW045D
Depth (ft):	(1-1.5)	(5-5.5)	(13-14)	(0-0.5)	(1-1.5)	(13-14)	(0-0.5)	(1-1.5)	(12.5-13.5)	(27-28)
Lab ID:	0410156-07	0410156-08	0410156-09	0410156-10	0410156-11	0410156-13	0410156-14	0410156-15	0410156-17	0411033-03
Date Collected:	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	11/01/2004
Dimethyl phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Di-n-butyl phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Di-n-octyl phthalate	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Fluoranthene	9800	66.7 U	102	502	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Fluorene	129	66.7 U	1460	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	284	66.7 U
Hexachlorobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Hexachlorobutadiene	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Hexachlorocyclopentadiene	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
Hexachloroethane	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Indeno(1,2,3-cd)pyrene	1840	66.7 U	66.7 U	158	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Isophorone	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Naphthalene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Nitrobenzene	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
N-Nitrosodimethylamine	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
N-Nitroso-Di-N-Propylamine	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
N-Nitrosodiphenylamine	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
Pentachlorophenol	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U	333 U
Phenanthrene	2700	66.7 U	2980	171	66.7 U	9050	66.7 U	66.7 U	215	66.7 U
Phenol	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U	133 U
Pyrene	11100	66.7 U	127	792	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U	66.7 U
VOLATILES (µg/L)										
Method 8260B										
1,1,1,2-Tetrachloroethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,1,1-Trichloroethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,1,2,2-Tetrachloroethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,1,2-Trichloroethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,1-Dichloroethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,1-Dichloroethene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,1-Dichloropropene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,2,3-Trichlorobenzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,2,3-Trichloropropane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,2,4-Trichlorobenzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,2,4-Trimethylbenzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,2-Dibromoethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW042S	LW042S	LW042S	LW043S	LW043S	LW043S	LW044S	LW044S	LW044S	LW045D
Depth (ft):	(1-1.5)	(5-5.5)	(13-14)	(0-0.5)	(1-1.5)	(13-14)	(0-0.5)	(1-1.5)	(12.5-13.5)	(27-28)
Lab ID:	0410156-07	0410156-08	0410156-09	0410156-10	0410156-11	0410156-13	0410156-14	0410156-15	0410156-17	0411033-03
Date Collected:	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	11/01/2004
1,2-Dichlorobenzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,2-Dichloroethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,2-Dichloropropane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,3,5-Trimethylbenzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,3-Dichlorobenzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,3-Dichloropropane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
1,4-Dichlorobenzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2,2-Dichloropropane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2-Butanone	NA	NA	40 U	40 U	40 U	40 U	40 U	40 U	40 U	NA
2-Chlorotoluene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
2-Hexanone	NA	NA	37.8	20 U	20 U	942	20 U	20 U	20 U	NA
4-Chlorotoluene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
4-Isopropyltoluene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
4-Methyl-2-Pentanone (MIBK)	NA	NA	40 U	40 U	40 U	40 U	40 U	40 U	40 U	NA
Acetone	NA	NA	100 U	100 U	100 U	100 U	100 U	100 U	100 U	NA
Benzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Bromobenzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Bromochloromethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Bromodichloromethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Bromoform	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Bromomethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Carbon disulfide	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Carbon tetrachloride	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Chlorobenzene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Chloroethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Chloroform	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Chloromethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
cis-1,2-Dichloroethene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
cis-1,3-Dichloropropene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Dibromochloromethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Dibromochloropropane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Dibromomethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Dichlorodifluoromethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Ethylbenzene	NA	NA	10 U	10 U	10 U	22.4	10 U	10 U	10 U	NA
Hexachlorobutadiene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA

TABLE E-6
PHASE III REMEDIAL INVESTIGATION
SOIL ANALYTICAL RESULTS - NEW WELL INSTALLATIONS
TIME OIL NORTHWEST TERMINAL

Location:	LW042S	LW042S	LW042S	LW043S	LW043S	LW043S	LW044S	LW044S	LW044S	LW045D
Depth (ft):	(1-1.5)	(5-5.5)	(13-14)	(0-0.5)	(1-1.5)	(13-14)	(0-0.5)	(1-1.5)	(12.5-13.5)	(27-28)
Lab ID:	0410156-07	0410156-08	0410156-09	0410156-10	0410156-11	0410156-13	0410156-14	0410156-15	0410156-17	0411033-03
Date Collected:	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	10/28/2004	11/01/2004
Isopropylbenzene	NA	NA	58.4	10 U	10 U	2050	10 U	10 U	3950	NA
m,p-Xylene	NA	NA	20 U	20 U	20 U	35.7	20 U	20 U	31.2	NA
Methyl tert-butyl ether	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Methylene chloride	NA	NA	53.8	71	66.1	65	67.3	60	62	NA
Naphthalene	NA	NA	44	10 U	10 U	32.2	10 U	10 U	10 U	NA
n-Butylbenzene	NA	NA	1170	10 U	10 U	5460	10 U	10 U	206	NA
n-Propylbenzene	NA	NA	471	10 U	10 U	10900	10 U	10 U	5740	NA
o-Xylene	NA	NA	10 U	10 U	10 U	32.2	10 U	10 U	10 U	NA
sec-Butylbenzene	NA	NA	193	10 U	10 U	2100	10 U	10 U	3980	NA
Styrene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
tert-Butylbenzene	NA	NA	10 U	10 U	10 U	51.2	10 U	10 U	32.9	NA
Tetrachloroethene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Toluene	NA	NA	10 U	10 U	10 U	23.8	10 U	10 U	17.9	NA
trans-1,2-Dichloroethene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
trans-1,3-Dichloropropene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Trichloroethene	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Trichlorofluoromethane	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Vinyl Chloride	NA	NA	10 U	10 U	10 U	10 U	10 U	10 U	10 U	NA
Percent Moisture	12	9.13	8.24	12.3	11.6	14.8	11.7	9.97	15.3	20.9

U = Indicates the compound was undetected at the reported concentration.

NA = Not analyzed.

Bold indicates detected value.

BZTO104(e)023639

Data Validation Report

TECHNICAL MEMORANDUM

TO: Rebekah Brooks, Landau Associates

FROM: April Wallace and Anne Halvorsen, Landau Associates

DATE: December 22, 2004

RE: **TIME OIL NORTHWEST TERMINAL NEW WELL INSTALLATION OCT.-NOV. 2004
LABORATORY DATA QUALITY EVALUATION
SOIL ANALYTICAL DATA**

INTRODUCTION

This technical memorandum provides the results of a data quality evaluation for 19 soil samples collected October 27-28, November 1-3, and November 18, 2004 at the Time Oil Northwest Terminal in Portland, Oregon. Six additional samples were archived by the laboratory. A data quality evaluation was performed for volatile organic compounds (VOCs; EPA Method 8260B), semivolatile organic compounds (SVOCs; EPA Method 8270C), pentachlorophenol (PCP; EPA Method 8270-SIM), diesel-range hydrocarbons (NWTPH-Dx), gasoline-range hydrocarbons (NWTPH-Gx), and total priority pollutant metals (EPA Method 6010).

Analyses of soil samples were performed by Specialty Analytical located in Tualatin, Oregon. This data quality evaluation covers Specialty data packages 0410156, 0411033, and 0411117.

The data quality evaluation was performed in accordance with applicable portions of the U.S. Environmental Protection Agency (EPA) *Contract Laboratory Program National Functional Guidelines for Organic Data Review* and *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review* (EPA 1994a, b).

The evaluation considered the following elements:

- Chain-of-custody records
- Holding times
- Method blanks
- Surrogate recoveries
- Matrix spike and laboratory duplicate sample recoveries and relative percent differences (RPDs)
- Laboratory control sample recoveries
- Conclusions and completeness.

Data validation qualifiers are added to sample results based on the evaluation of data quality. The absence of a data qualifier indicates that the data is acceptable without qualifications. Data validation qualifiers are summarized in Table 1.

CHAIN-OF CUSTODY RECORDS

Chain-of-custody records were included with each data package. The laboratory received all samples in good condition. All analyses requested on the chain-of-custody were performed.

HOLDING TIMES

For all analyses and all samples, except as specified below, the time between sample collection, extraction, and analyses was determined to be within EPA-specified holding times:

- VOC analysis for samples collected on October 27-28, 2004 (data package 0410156), was not requested at the time the laboratory received the samples. The laboratory was requested to analyze for VOCs after the 14-day holding time had expired. Samples were subsequently analyzed 34-35 days after collection, resulting in a holding time exceedance of 20-21 days. Therefore, all VOC results are qualified as estimates (J/UJ).

METHOD BLANKS

Method blanks were analyzed with each batch of samples for each analysis. No contamination was detected in any of the method blanks, except as indicated in Table 1 and discussed below:

- Nitrobenzene, 2-methylnaphthalene, bis(2-ethylhexyl)phthalate, butylbenzylphthalate, and di-n-butylphthalate were detected below the practical quantitation limits (PQL) in the method blanks for the SVOC analysis of package 0410156. These compounds were not detected in any associated project samples. No qualification of the data is necessary.
- Butylbenzylphthalate, di-n-butylphthalate, nitrobenzene, and diethylphthalate were detected in one method blank associated with the SVOC analyses reported in data package 0410156. Diethylphthalate was detected in sample LW042S(5-5.5) at a concentration less than ten times the method blank concentration; therefore, it was qualified as nondetect (U).
- Di-n-butylphthalate, fluorene, and nitrobenzene were detected below the PQL in both method blanks associated with the SVOC analyses reported in data package 0411033. These compounds were not detected in any associated project samples; therefore, no qualification of the data is necessary.
- Gasoline was detected below the PQL in one of the method blanks associated with the TPH-G analyses reported in data package 0411033. Gasoline was not detected in any associated project samples; therefore, no qualification of the data is necessary.

- Zinc was detected below the PQL in the method blank associated with the total priority pollutant metals analyses reported in data packages 0410156 and 0411033. All associated project samples had detected levels of zinc well above the action level of five times the method blank concentration; therefore, no qualification of the data is necessary.

SURROGATE SPIKE RECOVERIES

Appropriate compounds were used as surrogate spikes for each applicable analysis. All surrogate recoveries were within laboratory-specified control limits, except as indicated in Table 1 and discussed below:

- Package 0410156: recoveries of the surrogate 4-Bromofluorobenzene (4-BFB) in the VOC analyses exceeded the upper laboratory control limits in samples LW043S(13-14) and LW044S(12.5-13.5). The laboratory noted that the high results were due to matrix interference. The detected compounds in the associated samples are qualified as estimates (J).
- Package 0410156: recoveries of several surrogates in the SVOC analyses were outside of the laboratory control limits. According to EPA guidelines, samples are to be qualified only when two or more surrogates within the same fraction (acid/base) are outside of control limits. Only one sample, LW043S(13-14), had two recoveries within the one fraction (base) outside of control limits (2-Fluorobiphenyl recovery was low, and Nitrobenzene-d5 recovery was high). Associated base-neutral compounds for this sample are qualified as estimates J/UJ).
- Package 0410156: recoveries of the surrogate o-terphenyl (o-ter) in the TPH-D analyses exceeded the upper laboratory control limits in samples LW042S(13-14) and LW043S(13-14). The laboratory noted that the high results were due to matrix interference. The detected compounds in the associated samples are qualified as estimates (J).
- Package 0410156: recoveries of the surrogate 4-BFB in the TPH-G analyses did not meet the lower laboratory control limits for several samples. The low results are due to required sample dilution. No qualification of the data is necessary.
- Package 0411033: recoveries of the surrogate 2,4,6-Tribromophenol in the SVOC analyses were low for several samples. Because only one surrogate was out of the laboratory control limits for these analyses, no qualification of the data is necessary.

FIELD DUPLICATES

No blind field duplicate soil samples were collected during this sampling event. No qualification of the data is necessary.

FIELD TRIP BLANKS

No field trip blanks were collected or submitted for laboratory analysis. No qualification of the data is necessary.

LABORATORY CONTROL SAMPLE RESULTS

Laboratory control samples (LCS) were performed for all analyses. Recoveries for the laboratory control samples were all within laboratory-specified control limits. No qualification of the data is necessary.

MATRIX SPIKE AND LABORATORY DUPLICATE SAMPLES

Matrix spike/matrix spike duplicate samples and/or laboratory duplicate samples were performed for all analyses for each batch of samples. There were no exceedances of project sample matrix spikes or duplicates. No qualification of the data is necessary.

OVERALL DATA QUALITY AND COMPLETENESS

Data precision was evaluated through laboratory duplicates. Data accuracy was evaluated through laboratory control samples, matrix spikes, and surrogate spikes. Based on this data quality evaluation, all of the data were determined to be acceptable.

The completeness for this data set is 100 percent.

REFERENCES

EPA. 1994a. *Contract Laboratory Program National Functional Guidelines for Organic Data Review*. U.S. Environmental Protection Agency.

EPA. 1994b. *Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*. U.S. Environmental Protection Agency.

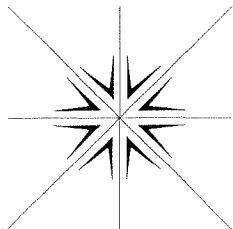
TABLE 1
SUMMARY OF DATA QUALIFIERS
TIME OIL NORTHWEST TERMINAL 4TH QUARTER 2004

Package Number	Analyte	Qualifier	Sample Number	Reason
0410156	All VOCs	J/UJ	LW042S(13-14)	Recommended holding time exceeded by 20-21 days
0410156	All VOCs	J/UJ	LW043S(0-0.5)	Recommended holding time exceeded by 20-21 days
0410156	All VOCs	J/UJ	LW043S(1-1.5)	Recommended holding time exceeded by 20-21 days
0410156	All VOCs	J/UJ	LW043S(13-14)	Recommended holding time exceeded by 20-21 days
0410156	All VOCs	J/UJ	LW044S(0-0.5)	Recommended holding time exceeded by 20-21 days
0410156	All VOCs	J/UJ	LW044S(1-1.5)	Recommended holding time exceeded by 20-21 days
0410156	All VOCs	J/UJ	LW044S(12.5-13.5)	Recommended holding time exceeded by 20-21 days
0410156	All detected VOCs	J	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	All detected VOCs	J	LW044S(12.5-13.5)	Surrogate recoveries exceeded control limits
0410156	Diesel	J	LW042S(13-14)	Surrogate recoveries exceeded control limits
0410156	Diesel	J	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Diethylphthalate	U	LW042S(5-5.5)	Method blank contamination
0410156	1,2,4-Trichlorobenzene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	1,2-Dichlorobenzene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	1,3-Dichlorobenzene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	1,4-Dichlorobenzene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	2,4-Dinitrotoluene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	2,6-Dinitrotoluene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	2-Chloronaphthalene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	2-Methylnaphthalene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	2-Nitroaniline	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	3,3-Dichlorobenzidine	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	3-Nitroaniline	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	4-Bromophenyl phenyl ether	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	4-Chloroaniline	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	4-Chlorophenyl phenyl ether	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	4-Nitroaniline	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Acenaphthene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Acenaphthylene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Anthracene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Benz(a)anthracene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Benzo(a)pyrene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Benzo(b)fluoranthene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits

Package Number	Analyte	Qualifier	Sample Number	Reason
0410156	Benzo(g,h,i)perylene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Benzo(k)fluoranthene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Benzyl alcohol	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Bis(2-chlorethoxy)methane	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Bis(2-chloroethyl)ether	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Bis(2-chloroisopropyl)ether	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Bis(2-ethylhexyl)phthalate	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Butyl benzyl phthalate	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Chrysene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Di-n-butyl phthalate	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Di-n-octyl phthalate	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Dibenz(a,h)anthracene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Dibenzofuran	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Diethyl phthalate	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Dimethyl phythalate	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Fluoranthene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Fluorene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Hexachlorobenzene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Hexachlorobutadiene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Hexachlorocyclopentadiene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Hexachloroethane	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Ideno(1,2,3-cd)pyrene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Isophorone	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	N-Nitrosodi-n-propylamine	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	N-Nitrosodimethylamine	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	N-Nitrosodiphenylamine	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Naphthalene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Nitrobenzene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Phenanthrene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits
0410156	Pyrene	J/UJ	LW043S(13-14)	Surrogate recoveries exceeded control limits

BZTO104(e)023646

Laboratory Data Packets



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

December 06, 2004

DEC - 9 2004

Mark Chandler
Time Oil Co.
2737 West Commodore Way
Seattle, WA 98199-1257

TEL: (206) 285-2400

FAX (206) 285-7833

RE: NW Terminal Additional Well Install Phase

Dear Mark Chandler:

Order No.: 0410156

Specialty Analytical received 17 samples on 10/29/2004 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

CC:
Terry McGoorty @ Landau Associates

1

Page 2 of 2

LANDAU
ASSOCIATES

☐ _____

BZTO104(e)023649

- ☒ Seattle (Edmonds) (425) 778-0907
☐ Tacoma (253) 926-2493
☐ Spokane (509) 327-9737
☐ Portland (Tigard) (503) 443-6010
☐ _____



Chain-of-Custody Record

Date 10/27/04
 Page 1 of 2

Project Name		Project No.		Testing Parameters										Turnaround Time		
Time Oil		231009.036												<input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/> _____		
Project Location/Event				Additional well install												
Sampler's Name				CHRISTY JOHNSON												
Project Contact				CHRISTY JOHNSON												
Send Results To				See Comments												
Sample I.D.	Date	Time	Matrix	No. of Containers											Observations/Comments	
W00402(14-14.5)	10/27/04	1430	Soil	2	4000											PLEASE SEND PDF REPORTS TO MARK CLEANDER, ROBERTA BLOKS, CHRISTY JOHNSON, CLARID COPY TO MARK CLEANDER & TERRY MCARDORTY & EDD TO ANNE HALVERSON
W00415(0-0.5)	10/28/04	915			/	/	/	/	/	/	/	/	/	/	/	
W00415(1-1.5)		930			/	/	/	/	/	/	/	/	/	/	/	
W00415(5-5.5)		935			4000											
W00415(10-14)		955			/	/	/	/	/	/	/	/	/	/	/	
W00425(0-0.5)		745			/	/	/	/	/	/	/	/	/	/	/	
W00425(1-1.5)		750			/	/	/	/	/	/	/	/	/	/	/	
W00425(5-5.5)		805			4000											
W00425(13-14)		835			/	/	/	/	/	/	/	/	/	/	/	
W00435(0-0.5)		1435			/	/	/	/	/	/	/	/	/	/	/	
W00435(1-1.5)		1440			/	/	/	/	/	/	/	/	/	/	/	
W00435(5-5.5)		1445			4000											
W00435(13-14)		1505			/	/	/	/	/	/	/	/	/	/	/	
W00445(0-0.5)		1130			/	/	/	/	/	/	/	/	/	/	/	
W00445(1-1.5)		1135			/	/	/	/	/	/	/	/	/	/	/	
W00445(5-5.5)		1150			4000											
Special Shipment/Handling or Storage Requirements				STORED ON ICE										Method of Shipment	HAND DELIVERED	
Relinquished by				Received by				Relinquished by				Received by				
Signature				Signature				Signature				Signature				
Printed Name				Printed Name				Printed Name				Printed Name				
Company				Company				Company				Company				
Date				Date				Date				Date				
Time				Time				Time				Time				

Specialty Analytical

06-Dec-04

Lab Order: 0410156
Client: Time Oil Co.
Project: NW Terminal Additional Well Inst

DATESREPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0410156-01A	LW0040R (14-14.5)	10/27/2004 2:20:00 PM	Soil	HOLD per Client Request			11/4/2004
0410156-02A	LW041S (0-0.5)	10/28/2004 9:15:00 AM		NWTPH-Dx		11/5/2004	11/10/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENT MOISTURE			11/2/2004
0410156-02B				SEMI-VOLATILE ORGANICS		11/4/2004	11/7/2004
				SEMI-VOLATILE ORGANICS		11/4/2004	11/8/2004
				Total Metals by ICP		11/1/2004	11/6/2004
0410156-03A	LW041S (1-1.5)	10/28/2004 9:20:00 AM		NWTPH-Dx		11/5/2004	11/8/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENT MOISTURE			11/2/2004
0410156-03B				SEMI-VOLATILE ORGANICS		11/4/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/6/2004
0410156-04A	LW041S (5-5.5)	10/28/2004 9:35:00 AM		HOLD per Client Request			11/4/2004
0410156-05A	LW041S (16-17)	10/28/2004 9:55:00 AM		NWTPH-Dx		11/5/2004	11/8/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENT MOISTURE			11/2/2004
0410156-05B				SEMI-VOLATILE ORGANICS		11/4/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/6/2004
0410156-06A	LW042S (0-0.5)	10/28/2004 7:45:00 AM		NWTPH-Dx		11/5/2004	11/8/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENT MOISTURE			11/2/2004
0410156-06B				SEMI-VOLATILE ORGANICS		11/4/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/6/2004
0410156-07A	LW042S (1-1.5)	10/28/2004 7:50:00 AM		NWTPH-Dx		11/5/2004	11/10/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENT MOISTURE			11/2/2004

Specialty Analytical

06-Dec-04

Lab Order: 0410156
Client: Time Oil Co.
Project: NW Terminal Additional Well Inst

DATESREPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0410156-07B	LW042S(1-1.5)	10/28/2004 7:50:00 AM	Soil	SEMI-VOLATILEORGANICS		11/4/2004	11/7/2004
				SEMI-VOLATILEORGANICS		11/4/2004	11/8/2004
				SEMI-VOLATILEORGANICS		11/4/2004	11/8/2004
				Total Metals by ICP		11/1/2004	11/6/2004
				Total Metals by ICP		11/1/2004	11/9/2004
0410156-08A	LW042S(5-5.5)	10/28/2004 8:05:00 AM		NWTPH-Dx		11/30/2004	12/2/2004
				PERCENT MOISTURE			12/2/2004
0410156-08B				SEMI-VOLATILEORGANICS		12/1/2004	12/1/2004
0410156-09A	LW042S(13-14)	10/28/2004 8:25:00 AM		NWTPH-Dx		11/5/2004	11/8/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENT MOISTURE			11/2/2004
0410156-09B				SEMI-VOLATILEORGANICS		11/4/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/6/2004
				Total Metals by ICP		11/1/2004	11/8/2004
				VOLATILES by GC/MS			12/2/2004
				VOLATILES by GC/MS			12/2/2004
0410156-10A	LW043S(0-0.5)	10/28/2004 2:35:00 PM		NWTPH-Dx		11/5/2004	11/10/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENT MOISTURE			11/2/2004
0410156-10B				SEMI-VOLATILEORGANICS		11/4/2004	11/8/2004
				SEMI-VOLATILEORGANICS		11/4/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/9/2004
				Total Metals by ICP		11/1/2004	11/6/2004
				Total Metals by ICP		11/1/2004	11/9/2004
				Total Metals by ICP		11/1/2004	11/8/2004
0410156-11A	LW043S(1-1.5)	10/28/2004 2:40:00 PM		VOLATILES by GC/MS			12/1/2004
				NWTPH-Dx		11/5/2004	11/8/2004
				NWTPH-Gx		11/1/2004	11/1/2004

Specialty Analytical

06-Dec-04

Lab Order: 0410156
Client: Time Oil Co.
Project: NW Terminal Additional Well Inst

DATESREPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0410156-11A	LW043S(1-1.5)	10/28/2004 2:40:00 PM	Soil	PERCENTMOISTURE			11/2/2004
0410156-11B				SEMI-VOLATILEORGANICS		11/4/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/6/2004
				Total Metals by ICP		11/1/2004	11/8/2004
				Total Metals by ICP		11/1/2004	11/9/2004
				VOLATILES by GC/MS			12/1/2004
0410156-12A	LW043S(5-5.5)	10/28/2004 2:45:00 PM		HOLD per Client Request			11/4/2004
0410156-13A	LW043S(13-14)	10/28/2004 3:05:00 PM		NWTPH-Dx		11/5/2004	11/10/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENTMOISTURE			11/2/2004
0410156-13B				SEMI-VOLATILEORGANICS		11/4/2004	11/7/2004
				SEMI-VOLATILEORGANICS		11/4/2004	11/8/2004
				Total Metals by ICP		11/1/2004	11/6/2004
				Total Metals by ICP		11/1/2004	11/8/2004
				VOLATILES by GC/MS			12/1/2004
				VOLATILES by GC/MS			12/2/2004
				VOLATILES by GC/MS			12/2/2004
0410156-14A	LW044S(0-0.5)	10/28/2004 11:30:00 AM		NWTPH-Dx		11/5/2004	11/8/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENTMOISTURE			11/2/2004
0410156-14B				SEMI-VOLATILEORGANICS		11/4/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/6/2004
				Total Metals by ICP		11/1/2004	11/8/2004
				Total Metals by ICP		11/1/2004	11/9/2004
				VOLATILES by GC/MS			12/1/2004
0410156-15A	LW044S(1-1.5)	10/28/2004 11:35:00 AM		NWTPH-Dx		11/5/2004	11/8/2004
				NWTPH-Gx		11/1/2004	11/1/2004
				PERCENTMOISTURE			11/2/2004

Specialty Analytical

06-Dec-04

Lab Order: 0410156
Client: Time Oil Co.
Project: NW Terminal Additional Well Inst

DATESREPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0410156-15B	LW044S(1-1.5)	10/28/2004 11:35:00 AM	Soil	SEMI-VOLATILEORGANICS		11/4/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/8/2004
				Total Metals by ICP		11/1/2004	11/6/2004
				VOLATILES by GC/MS			12/1/2004
0410156-16A	LW044S(5-5.5)	10/28/2004 11:50:00 AM		HOLD per Client Request			11/4/2004
0410156-17A	LW044S(12.5-13.5)	10/28/2004 12:10:00 PM		NWTPH-Dx		11/5/2004	11/8/2004
				NWTPH-Gx		11/1/2004	11/2/2004
				PERCENT MOISTURE			11/2/2004
0410156-17B				SEMI-VOLATILEORGANICS		11/4/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/7/2004
				Total Metals by ICP		11/1/2004	11/8/2004
				VOLATILES by GC/MS			12/2/2004
				VOLATILES by GC/MS			12/2/2004
				VOLATILES by GC/MS			12/2/2004

Specialty Analytical

Date: 06-Dec-04

CLIENT:	Time Oil Co.	Lab Order:	0410156
Project:	NW Terminal Additional Well Install Phase III		

Lab ID:	0410156-01	Collection Date:	10/27/2004 2:20:00 PM			
Client Sample ID:	LW0040R (14-14.5)	Matrix:	SOIL			
Analyses	Result	Limit	Qual	Units	DF	Date Analyzed

HOLD PER CLIENT REQUEST	PER CLIENT	Analyst: ADM
Hold	HOLD	11/4/2004

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-02

Collection Date: 10/28/2004 9:15:00 AM

Client Sample ID: LW041S (0-0.5)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: tlf
Diesel	ND	16.4		mg/Kg-dry	1	11/10/2004
Lube Oil	63.3	54.7		mg/Kg-dry	1	11/10/2004
Surr: o-Terphenyl	90.8	50-150		%REC	1	11/10/2004
NWTPH-GX		NWTPH-GX				Analyst: tlf
Gasoline	ND	2.74		mg/Kg-dry	1	11/1/2004
Surr: 4-Bromofluorobenzene	92.0	50-150		%REC	1	11/1/2004
TOTAL METALS BY ICP		E6010				Analyst: skc
Arsenic	ND	1.52		mg/Kg	1	11/6/2004 10:49:52 PM
Chromium	14.2	0.379		mg/Kg	1	11/6/2004 10:49:52 PM
Copper	23.9	0.758		mg/Kg	1	11/6/2004 10:49:52 PM
Lead	ND	1.52		mg/Kg	1	11/6/2004 10:49:52 PM
Nickel	37.2	0.379		mg/Kg	1	11/6/2004 10:49:52 PM
Zinc	74.0	0.758		mg/Kg	1	11/6/2004 10:49:52 PM
SEMIVOLATILE ORGANICS BY GC/MS		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 3:45:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 3:45:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 3:45:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 3:45:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 3:45:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 3:45:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 3:45:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 3:45:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 3:45:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 3:45:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 3:45:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 3:45:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 3:45:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 3:45:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 3:45:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 3:45:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Benz(a)anthracene	179	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Benzo(a)pyrene	269	66.7	µg/Kg	1	11/8/2004 5:22:00 PM
Benzo(b)fluoranthene	331	66.7	µg/Kg	1	11/8/2004 5:22:00 PM
Benzo(g,h,i)perylene	228	66.7	µg/Kg	1	11/8/2004 5:22:00 PM
Benzo(k)fluoranthene	95.7	66.7	µg/Kg	1	11/8/2004 5:22:00 PM
Benzoic Acid	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 3:45:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 3:45:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Chrysene	211	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/8/2004 5:22:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Fluoranthene	399	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 3:45:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 3:45:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 3:45:00 PM
Indeno(1,2,3-cd)pyrene	168	66.7	µg/Kg	1	11/8/2004 5:22:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 3:45:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 3:45:00 PM
Phenanthrene	143	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Phenol	ND	133	µg/Kg	1	11/7/2004 3:45:00 PM
Pyrene	580	66.7	µg/Kg	1	11/7/2004 3:45:00 PM
Surr: 2,4,6-Tribromophenol	70.5	57.8-119	%REC	1	11/7/2004 3:45:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	75.8	52.6-93.2	%REC	1	11/7/2004 3:45:00 PM
Surr: 2-Fluorophenol	54.8	40.7-111	%REC	1	11/7/2004 3:45:00 PM
Surr: 4-Terphenyl-d14	78.5	49.8-118	%REC	1	11/7/2004 3:45:00 PM
Surr: Nitrobenzene-d5	52.5	44.8-103	%REC	1	11/7/2004 3:45:00 PM
Surr: Phenol-d6	59.5	47.5-117	%REC	1	11/7/2004 3:45:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co. **Lab Order:** 0410156
Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-03 **Collection Date:** 10/28/2004 9:20:00 AM
Client Sample ID: LW041S (1-1.5) **Matrix:** SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
		NWTPH-DX				Analyst: tlf
Diesel	ND	16.5		mg/Kg-dry	1	11/8/2004
Lube Oil	ND	54.8		mg/Kg-dry	1	11/8/2004
Surr: o-Terphenyl	96.3	50-150		%REC	1	11/8/2004
NWTPH-GX						
		NWTPH-GX				Analyst: tlf
Gasoline	ND	2.74		mg/Kg-dry	1	11/1/2004
Surr: 4-Bromofluorobenzene	99.1	50-150		%REC	1	11/1/2004
TOTAL METALS BY ICP						
		E6010				Analyst: skc
Arsenic	ND	1.72		mg/Kg	1	11/6/2004 10:55:12 PM
Chromium	14.7	0.431		mg/Kg	1	11/6/2004 10:55:12 PM
Copper	11.7	0.862		mg/Kg	1	11/6/2004 10:55:12 PM
Lead	ND	1.72		mg/Kg	1	11/6/2004 10:55:12 PM
Nickel	16.4	0.431		mg/Kg	1	11/6/2004 10:55:12 PM
Zinc	46.2	0.862		mg/Kg	1	11/6/2004 10:55:12 PM
SEMIVOLATILE ORGANICS BY GC/MS						
		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 10:41:00 AM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 10:41:00 AM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 10:41:00 AM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 10:41:00 AM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 10:41:00 AM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 10:41:00 AM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 10:41:00 AM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 10:41:00 AM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 10:41:00 AM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 10:41:00 AM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 10:41:00 AM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 10:41:00 AM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 10:41:00 AM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 10:41:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 10:41:00 AM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 10:41:00 AM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Benzoic Acid	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 10:41:00 AM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 10:41:00 AM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Chrysene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Fluoranthene	87.7	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Fluorene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 10:41:00 AM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 10:41:00 AM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 10:41:00 AM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 10:41:00 AM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 10:41:00 AM
Phenanthrene	ND	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Phenol	ND	133	µg/Kg	1	11/7/2004 10:41:00 AM
Pyrene	101	66.7	µg/Kg	1	11/7/2004 10:41:00 AM
Surr: 2,4,6-Tribromophenol	57.9	57.8-119	%REC	1	11/7/2004 10:41:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	65.9	52.6-93.2	%REC	1	11/7/2004 10:41:00 AM
Surr: 2-Fluorophenol	55.4	40.7-111	%REC	1	11/7/2004 10:41:00 AM
Surr: 4-Terphenyl-d14	62.3	49.8-118	%REC	1	11/7/2004 10:41:00 AM
Surr: Nitrobenzene-d5	51.5	44.8-103	%REC	1	11/7/2004 10:41:00 AM
Surr: Phenol-d6	55.5	47.5-117	%REC	1	11/7/2004 10:41:00 AM

Lab ID: 0410156-04

Collection Date: 10/28/2004 9:35:00 AM

Client Sample ID: LW041S (5-5.5)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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HOLD PER CLIENT REQUEST

PER CLIENT

Analyst: ADM

Hold	HOLD				1	11/4/2004
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Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-05

Collection Date: 10/28/2004 9:55:00 AM

Client Sample ID: LW041S (16-17)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: tif
Diesel	ND	16.8		mg/Kg-dry	1	11/8/2004
Lube Oil	ND	56.0		mg/Kg-dry	1	11/8/2004
Surr: o-Terphenyl	95.1	50-150		%REC	1	11/8/2004
NWTPH-GX		NWTPH-GX				Analyst: tif
Gasoline	ND	2.80		mg/Kg-dry	1	11/1/2004
Surr: 4-Bromofluorobenzene	98.9	50-150		%REC	1	11/1/2004
TOTAL METALS BY ICP		E6010				Analyst: skc
Arsenic	2.21	1.61		mg/Kg	1	11/6/2004 11:00:32 PM
Chromium	13.0	0.403		mg/Kg	1	11/6/2004 11:00:32 PM
Copper	11.2	0.806		mg/Kg	1	11/6/2004 11:00:32 PM
Lead	ND	1.61		mg/Kg	1	11/6/2004 11:00:32 PM
Nickel	12.1	0.403		mg/Kg	1	11/6/2004 11:00:32 PM
Zinc	44.1	0.806		mg/Kg	1	11/6/2004 11:00:32 PM
SEMIVOLATILE ORGANICS BY GC/MS		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 11:11:00 AM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 11:11:00 AM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 11:11:00 AM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 11:11:00 AM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 11:11:00 AM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 11:11:00 AM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 11:11:00 AM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 11:11:00 AM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 11:11:00 AM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 11:11:00 AM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 11:11:00 AM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 11:11:00 AM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 11:11:00 AM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 11:11:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 11:11:00 AM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 11:11:00 AM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Benzoic Acid	ND	667	µg/Kg	1	11/7/2004 11:11:00 AM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 11:11:00 AM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 11:11:00 AM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Bis(2-ethylhexyl)phthalate	190	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Chrysene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Fluorene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 11:11:00 AM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 11:11:00 AM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 11:11:00 AM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 11:11:00 AM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 11:11:00 AM
Phenanthrene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Phenol	ND	133	µg/Kg	1	11/7/2004 11:11:00 AM
Pyrene	ND	66.7	µg/Kg	1	11/7/2004 11:11:00 AM
Surr: 2,4,6-Tribromophenol	59.4	57.8-119	%REC	1	11/7/2004 11:11:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	82.9	52.6-93.2	%REC	1	11/7/2004 11:11:00 AM
Surr: 2-Fluorophenol	64.7	40.7-111	%REC	1	11/7/2004 11:11:00 AM
Surr: 4-Terphenyl-d14	78.7	49.8-118	%REC	1	11/7/2004 11:11:00 AM
Surr: Nitrobenzene-d5	59.8	44.8-103	%REC	1	11/7/2004 11:11:00 AM
Surr: Phenol-d6	70.1	47.5-117	%REC	1	11/7/2004 11:11:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

Lab ID: 0410156-06
Client Sample ID: LW042S (0-0.5)

Collection Date: 10/28/2004 7:45:00 AM

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
		NWTPH-DX				Analyst: tlf
Diesel	ND	17.2		mg/Kg-dry	1	11/8/2004
Lube Oil	ND	57.5		mg/Kg-dry	1	11/8/2004
Surr: o-Terphenyl	91.3	50-150		%REC	1	11/8/2004
NWTPH-GX						
		NWTPH-GX				Analyst: tlf
Gasoline	ND	2.87		mg/Kg-dry	1	11/1/2004
Surr: 4-Bromofluorobenzene	100	50-150		%REC	1	11/1/2004
TOTAL METALS BY ICP						
		E6010				Analyst: skc
Arsenic	ND	1.72		mg/Kg	1	11/6/2004 11:05:53 PM
Chromium	18.5	0.431		mg/Kg	1	11/6/2004 11:05:53 PM
Copper	20.4	0.862		mg/Kg	1	11/6/2004 11:05:53 PM
Lead	14.1	1.72		mg/Kg	1	11/6/2004 11:05:53 PM
Nickel	23.5	0.431		mg/Kg	1	11/6/2004 11:05:53 PM
Zinc	72.4	0.862		mg/Kg	1	11/6/2004 11:05:53 PM
SEMIVOLATILE ORGANICS BY GC/MS						
		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 4:15:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 4:15:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 4:15:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 4:15:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 4:15:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 4:15:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 4:15:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 4:15:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 4:15:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 4:15:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 4:15:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 4:15:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 4:15:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 4:15:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 4:15:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 4:15:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Benz(a)anthracene	71.7	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Benzo(a)pyrene	119	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Benzo(b)fluoranthene	156	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Benzo(g,h,i)perylene	78.7	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/7/2004 4:15:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 4:15:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 4:15:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Chrysene	83.0	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Fluoranthene	169	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 4:15:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 4:15:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 4:15:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 4:15:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 4:15:00 PM
Phenanthrene	ND	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Phenol	ND	133	µg/Kg	1	11/7/2004 4:15:00 PM
Pyrene	267	66.7	µg/Kg	1	11/7/2004 4:15:00 PM
Surr: 2,4,6-Tribromophenol	65.3	57.8-119	%REC	1	11/7/2004 4:15:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	73.0	52.6-93.2	%REC	1	11/7/2004 4:15:00 PM
Surr: 2-Fluorophenol	54.9	40.7-111	%REC	1	11/7/2004 4:15:00 PM
Surr: 4-Terphenyl-d14	79.0	49.8-118	%REC	1	11/7/2004 4:15:00 PM
Surr: Nitrobenzene-d5	51.0	44.8-103	%REC	1	11/7/2004 4:15:00 PM
Surr: Phenol-d6	60.2	47.5-117	%REC	1	11/7/2004 4:15:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co. Lab Order: 0410156
Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-07 Collection Date: 10/28/2004 7:50:00 AM
Client Sample ID: LW042S (1-1.5) Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
						Analyst: tlf
Diesel	66.0	17.0	A1	mg/Kg-dry	1	11/10/2004
Lube Oil	221	56.8	A2	mg/Kg-dry	1	11/10/2004
Surr: o-Terphenyl	94.5	50-150		%REC	1	11/10/2004
NWTPH-GX						
						Analyst: tlf
Gasoline	ND	2.84		mg/Kg-dry	1	11/1/2004
Surr: 4-Bromofluorobenzene	97.6	50-150		%REC	1	11/1/2004
TOTAL METALS BY ICP						
						Analyst: skc
Arsenic	ND	1.52		mg/Kg	1	11/6/2004 11:11:14 PM
Chromium	26.3	0.379		mg/Kg	1	11/6/2004 11:11:14 PM
Copper	21.7	0.758		mg/Kg	1	11/6/2004 11:11:14 PM
Lead	33.0	1.52		mg/Kg	1	11/6/2004 11:11:14 PM
Nickel	18.3	0.379		mg/Kg	1	11/6/2004 11:11:14 PM
Zinc	106	7.58		mg/Kg	10	11/9/2004 6:37:37 PM
SEMIVOLATILE ORGANICS BY GC/MS						
						Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 4:46:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 4:46:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 4:46:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 4:46:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 4:46:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 4:46:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 4:46:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 4:46:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 4:46:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 4:46:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 4:46:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 4:46:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 4:46:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 4:46:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 4:46:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 4:46:00 PM
Acenaphthene	67.0	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Acenaphthylene	368	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Anthracene	471	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Benz(a)anthracene	3180	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Benzo(a)pyrene	5010	667	µg/Kg	10	11/8/2004 6:23:00 PM
Benzo(b)fluoranthene	5820	667	µg/Kg	10	11/8/2004 6:23:00 PM
Benzo(g,h,i)perylene	2200	66.7	µg/Kg	1	11/8/2004 5:53:00 PM
Benzo(k)fluoranthene	1550	66.7	µg/Kg	1	11/8/2004 5:53:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/7/2004 4:46:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 4:46:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 4:46:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Carbazole	81.7	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Chrysene	4090	667	µg/Kg	10	11/8/2004 6:23:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Dibenz(a,h)anthracene	479	66.7	µg/Kg	1	11/8/2004 5:53:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Fluoranthene	9800	667	µg/Kg	10	11/8/2004 6:23:00 PM
Fluorene	129	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 4:46:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 4:46:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 4:46:00 PM
Indeno(1,2,3-cd)pyrene	1840	66.7	µg/Kg	1	11/8/2004 5:53:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 4:46:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 4:46:00 PM
Phenanthrene	2700	66.7	µg/Kg	1	11/7/2004 4:46:00 PM
Phenol	ND	133	µg/Kg	1	11/7/2004 4:46:00 PM
Pyrene	11100	667	µg/Kg	10	11/8/2004 6:23:00 PM
Surr: 2,4,6-Tribromophenol	68.1	57.8-119	%REC	1	11/7/2004 4:46:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	69.6	52.6-93.2	%REC	1	11/7/2004 4:46:00 PM
Surr: 2-Fluorophenol	43.8	40.7-111	%REC	1	11/7/2004 4:46:00 PM
Surr: 4-Terphenyl-d14	99.0	49.8-118	%REC	1	11/7/2004 4:46:00 PM
Surr: Nitrobenzene-d5	43.7	44.8-103	S %REC	1	11/7/2004 4:46:00 PM
Surr: Phenol-d6	54.9	47.5-117	%REC	1	11/7/2004 4:46:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-08

Collection Date: 10/28/2004 8:05:00 AM

Client Sample ID: LW042S (5-5.5)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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NWTPH-DX

NWTPH-DX

Analyst: tlf

Diesel	ND	16.5	HT	mg/Kg-dry	1	12/2/2004
Lube Oil	ND	55.0	HT	mg/Kg-dry	1	12/2/2004
Surr: o-Terphenyl	89.3	50-150		%REC	1	12/2/2004

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

1,2,4-Trichlorobenzene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
1,2-Dichlorobenzene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
1,3-Dichlorobenzene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
1,4-Dichlorobenzene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2,4,5-Trichlorophenol	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2,4,6-Trichlorophenol	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2,4-Dichlorophenol	ND	200	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2,4-Dimethylphenol	ND	200	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2,4-Dinitrophenol	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2,4-Dinitrotoluene	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2,6-Dinitrotoluene	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2-Chloronaphthalene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2-Chlorophenol	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2-Methylnaphthalene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2-Methylphenol	ND	133	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2-Nitroaniline	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
2-Nitrophenol	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
3,3-Dichlorobenzidine	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
3-&4-Methylphenol	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
3-Nitroaniline	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
4,6-Dinitro-2-methylphenol	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
4-Bromophenyl phenyl ether	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
4-Chloro-3-methylphenol	ND	133	HT	µg/Kg	1	12/1/2004 2:58:00 PM
4-Chloroaniline	ND	200	HT	µg/Kg	1	12/1/2004 2:58:00 PM
4-Chlorophenyl phenyl ether	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
4-Nitroaniline	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
4-Nitrophenol	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Acenaphthene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Acenaphthylene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Anthracene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Benz(a)anthracene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Benzo(a)pyrene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Benzo(b)fluoranthene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Benzo(g,h,i)perylene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Benzo(k)fluoranthene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Benzoic Acid	ND	667	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Benzyl Alcohol	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Bis(2-chloroethyl)ether	ND	133	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Butyl benzyl phthalate	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Carbazole	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Chrysene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Di-n-butyl phthalate	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Di-n-octyl phthalate	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Dibenz(a,h)anthracene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Dibenzofuran	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Diethyl phthalate	331	66.7	BHT	µg/Kg	1	12/1/2004 2:58:00 PM
Dimethyl phthalate	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Fluoranthene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Fluorene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Hexachlorobenzene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Hexachlorobutadiene	ND	133	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Hexachlorocyclopentadiene	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Hexachloroethane	ND	133	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Isophorone	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
N-Nitrosodi-n-propylamine	ND	133	HT	µg/Kg	1	12/1/2004 2:58:00 PM
N-Nitrosodimethylamine	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
N-Nitrosodiphenylamine	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Naphthalene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Nitrobenzene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Pentachlorophenol	ND	333	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Phenanthrene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Phenol	ND	133	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Pyrene	ND	66.7	HT	µg/Kg	1	12/1/2004 2:58:00 PM
Surr: 2,4,6-Tribromophenol	72.2	57.8-119		%REC	1	12/1/2004 2:58:00 PM
Surr: 2-Fluorobiphenyl	89.7	52.6-93.2		%REC	1	12/1/2004 2:58:00 PM
Surr: 2-Fluorophenol	88.0	40.7-111		%REC	1	12/1/2004 2:58:00 PM
Surr: 4-Terphenyl-d14	80.7	49.8-118		%REC	1	12/1/2004 2:58:00 PM
Surr: Nitrobenzene-d5	82.2	44.8-103		%REC	1	12/1/2004 2:58:00 PM
Surr: Phenol-d6	88.5	47.5-117		%REC	1	12/1/2004 2:58:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co. Lab Order: 0410156
Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-09 Collection Date: 10/28/2004 8:25:00 AM
Client Sample ID: LW042S (13-14) Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
NWTPH-DX				Analyst: tlf		
Diesel	4750	16.3		mg/Kg-dry	1	11/8/2004
Lube Oil	ND	54.5	A3	mg/Kg-dry	1	11/8/2004
Surr: o-Terphenyl	368	50-150	S,MI	%REC	1	11/8/2004
NWTPH-GX						
NWTPH-GX				Analyst: tlf		
Gasoline	705	27.2		mg/Kg-dry	10	11/1/2004
Surr: 4-Bromofluorobenzene	26.8	50-150	S,D	%REC	10	11/1/2004
TOTAL METALS BY ICP						
E6010				Analyst: skc		
Arsenic	ND	1.61		mg/Kg	1	11/8/2004 6:01:15 PM
Chromium	12.4	0.403		mg/Kg	1	11/8/2004 6:01:15 PM
Copper	10.8	0.806		mg/Kg	1	11/6/2004 11:32:53 PM
Lead	ND	1.61		mg/Kg	1	11/6/2004 11:32:53 PM
Nickel	12.1	0.403		mg/Kg	1	11/6/2004 11:32:53 PM
Zinc	42.2	0.806		mg/Kg	1	11/6/2004 11:32:53 PM
SEMIVOLATILE ORGANICS BY GC/MS						
SW8270D				Analyst: bda		
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 11:41:00 AM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 11:41:00 AM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 11:41:00 AM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 11:41:00 AM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 11:41:00 AM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 11:41:00 AM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 11:41:00 AM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 11:41:00 AM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 11:41:00 AM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 11:41:00 AM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 11:41:00 AM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 11:41:00 AM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 11:41:00 AM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 11:41:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 11:41:00 AM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 11:41:00 AM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Benzoic Acid	ND	667	µg/Kg	1	11/7/2004 11:41:00 AM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 11:41:00 AM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 11:41:00 AM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Chrysene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Fluoranthene	102	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Fluorene	1460	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 11:41:00 AM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 11:41:00 AM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 11:41:00 AM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 11:41:00 AM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 11:41:00 AM
Phenanthrene	2980	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Phenol	ND	133	µg/Kg	1	11/7/2004 11:41:00 AM
Pyrene	127	66.7	µg/Kg	1	11/7/2004 11:41:00 AM
Surr: 2,4,6-Tribromophenol	137	57.8-119	S %REC	1	11/7/2004 11:41:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	91.6	52.6-93.2	%REC	1	11/7/2004 11:41:00 AM
Surr: 2-Fluorophenol	70.8	40.7-111	%REC	1	11/7/2004 11:41:00 AM
Surr: 4-Terphenyl-d14	82.7	49.8-118	%REC	1	11/7/2004 11:41:00 AM
Surr: Nitrobenzene-d5	94.6	44.8-103	%REC	1	11/7/2004 11:41:00 AM
Surr: Phenol-d6	72.2	47.5-117	%REC	1	11/7/2004 11:41:00 AM

VOLATILES BY GC/MS

SW8260B

Analyst: seb

1,1,1,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,1,1-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,1,2,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,1,2-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,1-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,1-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,1-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,2,3-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,2,3-Trichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,2,4-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,2,4-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,2-Dibromo-3-chloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,2-Dibromoethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,2-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,2-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,3,5-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,3-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,3-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
1,4-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
2,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
2-Butanone	ND	40.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
2-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
2-Hexanone	37.8	20.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
4-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
4-Isopropyltoluene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
4-Methyl-2-pentanone	ND	40.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Acetone	ND	100	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Benzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Bromobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Bromochloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Bromodichloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Bromoform	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Bromomethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Carbon disulfide	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Carbon tetrachloride	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Chlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Chloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

VOLATILES BY GC/MS

SW8260B

Analyst: seb

Chloroform	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Chloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
cis-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
cis-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Dibromochloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Dibromomethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Dichlorodifluoromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Ethylbenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Hexachlorobutadiene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Isopropylbenzene	58.4	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
m,p-Xylene	ND	20.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Methyl tert-butyl ether	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Methylene chloride	53.8	50.0	P,HT	µg/Kg	1	12/2/2004 2:19:00 AM
n-Butylbenzene	1170	100	HT	µg/Kg	10	12/2/2004 12:36:00 AM
n-Propylbenzene	471	100	HT	µg/Kg	10	12/2/2004 12:36:00 AM
Naphthalene	44.0	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
o-Xylene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
sec-Butylbenzene	193	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Styrene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
tert-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Tetrachloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Toluene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
trans-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
trans-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Trichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Trichlorofluoromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Vinyl chloride	ND	10.0	HT	µg/Kg	1	12/2/2004 2:19:00 AM
Surr: 1,2-Dichloroethane-d4	74.1	71.5-112	HT	%REC	1	12/2/2004 2:19:00 AM
Surr: 4-Bromofluorobenzene	102	75.7-122	HT	%REC	1	12/2/2004 2:19:00 AM
Surr: Dibromofluoromethane	71.3	64.3-124	HT	%REC	1	12/2/2004 2:19:00 AM
Surr: Toluene-d8	78.0	74.9-120	HT	%REC	1	12/2/2004 2:19:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-10

Collection Date: 10/28/2004 2:35:00 PM

Client Sample ID: LW043S (0-0.5)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
						Analyst: tlf
Diesel	44.9	17.1	A1	mg/Kg-dry	1	11/10/2004
Lube Oil	79.5	57.0	A2	mg/Kg-dry	1	11/10/2004
Surr: o-Terphenyl	87.2	50-150		%REC	1	11/10/2004
NWTPH-GX						
						Analyst: tlf
Gasoline	18.2	2.85		mg/Kg-dry	1	11/1/2004
Surr: 4-Bromofluorobenzene	109	50-150		%REC	1	11/1/2004
TOTAL METALS BY ICP						
						Analyst: skc
Arsenic	ND	1.72		mg/Kg	1	11/8/2004 6:06:33 PM
Chromium	146	21.6		mg/Kg	50	11/9/2004 6:42:58 PM
Copper	35.7	0.862		mg/Kg	1	11/6/2004 11:38:14 PM
Lead	141	1.72		mg/Kg	1	11/6/2004 11:38:14 PM
Nickel	40.5	21.6		mg/Kg	50	11/9/2004 6:42:58 PM
Zinc	156	8.62		mg/Kg	10	11/9/2004 6:48:24 PM
SEMIVOLATILE ORGANICS BY GC/MS						
						Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 5:16:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 5:16:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 5:16:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 5:16:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 5:16:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 5:16:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 5:16:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 5:16:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 5:16:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 5:16:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 5:16:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 5:16:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 5:16:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 5:16:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 5:16:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 5:16:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Benz(a)anthracene	201	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Benzo(a)pyrene	295	66.7	µg/Kg	1	11/8/2004 6:53:00 PM
Benzo(b)fluoranthene	393	66.7	µg/Kg	1	11/8/2004 6:53:00 PM
Benzo(g,h,i)perylene	203	66.7	µg/Kg	1	11/8/2004 6:53:00 PM
Benzo(k)fluoranthene	117	66.7	µg/Kg	1	11/8/2004 6:53:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/7/2004 5:16:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 5:16:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 5:16:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Bis(2-ethylhexyl)phthalate	70.0	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Chrysene	235	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/8/2004 6:53:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Fluoranthene	502	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 5:16:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 5:16:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 5:16:00 PM
Indeno(1,2,3-cd)pyrene	158	66.7	µg/Kg	1	11/8/2004 6:53:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 5:16:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 5:16:00 PM
Phenanthrene	171	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Phenol	ND	133	µg/Kg	1	11/7/2004 5:16:00 PM
Pyrene	792	66.7	µg/Kg	1	11/7/2004 5:16:00 PM
Surr: 2,4,6-Tribromophenol	63.5	57.8-119	%REC	1	11/7/2004 5:16:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	66.6	52.6-93.2	%REC	1	11/7/2004 5:16:00 PM
Surr: 2-Fluorophenol	54.9	40.7-111	%REC	1	11/7/2004 5:16:00 PM
Surr: 4-Terphenyl-d14	81.0	49.8-118	%REC	1	11/7/2004 5:16:00 PM
Surr: Nitrobenzene-d5	47.9	44.8-103	%REC	1	11/7/2004 5:16:00 PM
Surr: Phenol-d6	58.4	47.5-117	%REC	1	11/7/2004 5:16:00 PM

VOLATILES BY GC/MS

SW8260B

Analyst: seb

1,1,1,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,1,1-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,1,2,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,1,2-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,1-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,1-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,1-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,2,3-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,2,3-Trichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,2,4-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,2,4-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,2-Dibromo-3-chloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,2-Dibromoethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,2-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,2-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,3,5-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,3-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,3-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
1,4-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
2,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
2-Butanone	ND	40.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
2-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
2-Hexanone	ND	20.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
4-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
4-Isopropyltoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
4-Methyl-2-pentanone	ND	40.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Acetone	ND	100	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Benzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Bromobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Bromochloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Bromodichloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Bromoform	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Bromomethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Carbon disulfide	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Carbon tetrachloride	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Chlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Chloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

VOLATILES BY GC/MS

SW8260B

Analyst: seb

Chloroform	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Chloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
cis-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
cis-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Dibromochloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Dibromomethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Dichlorodifluoromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Ethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Hexachlorobutadiene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Isopropylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
m,p-Xylene	ND	20.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Methyl tert-butyl ether	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Methylene chloride	71.0	50.0	P,HT	µg/Kg	1	12/1/2004 9:11:00 PM
n-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
n-Propylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Naphthalene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
o-Xylene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
sec-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Styrene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
tert-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Tetrachloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Toluene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
trans-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
trans-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Trichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Trichlorofluoromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Vinyl chloride	ND	10.0	HT	µg/Kg	1	12/1/2004 9:11:00 PM
Surr: 1,2-Dichloroethane-d4	77.8	71.5-112	HT	%REC	1	12/1/2004 9:11:00 PM
Surr: 4-Bromofluorobenzene	91.0	75.7-122	HT	%REC	1	12/1/2004 9:11:00 PM
Surr: Dibromofluoromethane	72.7	64.3-124	HT	%REC	1	12/1/2004 9:11:00 PM
Surr: Toluene-d8	77.9	74.9-120	HT	%REC	1	12/1/2004 9:11:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-11

Collection Date: 10/28/2004 2:40:00 PM

Client Sample ID: LW043S (1-1.5)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX		NWTPH-DX				Analyst: tlf
Diesel	36.5	17.0		mg/Kg-dry	1	11/8/2004
Lube Oil	ND	56.6		mg/Kg-dry	1	11/8/2004
Surr: o-Terphenyl	93.4	50-150		%REC	1	11/8/2004
NWTPH-GX		NWTPH-GX				Analyst: tlf
Gasoline	3.54	2.83		mg/Kg-dry	1	11/1/2004
Surr: 4-Bromofluorobenzene	103	50-150		%REC	1	11/1/2004
TOTAL METALS BY ICP		E6010				Analyst: skc
Arsenic	ND	1.56		mg/Kg	1	11/8/2004 6:11:49 PM
Chromium	29.2	0.391		mg/Kg	1	11/8/2004 6:11:49 PM
Copper	19.3	0.781		mg/Kg	1	11/6/2004 11:43:33 PM
Lead	16.6	1.56		mg/Kg	1	11/6/2004 11:43:33 PM
Nickel	18.5	0.391		mg/Kg	1	11/6/2004 11:43:33 PM
Zinc	91.9	7.81		mg/Kg	10	11/9/2004 7:10:03 PM
SEMIVOLATILE ORGANICS BY GC/MS		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 12:12:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 12:12:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 12:12:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 12:12:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 12:12:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 12:12:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 12:12:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 12:12:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 12:12:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 12:12:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 12:12:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 12:12:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 12:12:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 12:12:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 12:12:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 12:12:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/7/2004 12:12:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 12:12:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 12:12:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 12:12:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 12:12:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 12:12:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 12:12:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 12:12:00 PM
Phenanthrene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Phenol	ND	133	µg/Kg	1	11/7/2004 12:12:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/7/2004 12:12:00 PM
Surr: 2,4,6-Tribromophenol	59.0	57.8-119	%REC	1	11/7/2004 12:12:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	70.6	52.6-93.2	%REC	1	11/7/2004 12:12:00 PM
Surr: 2-Fluorophenol	55.3	40.7-111	%REC	1	11/7/2004 12:12:00 PM
Surr: 4-Terphenyl-d14	69.5	49.8-118	%REC	1	11/7/2004 12:12:00 PM
Surr: Nitrobenzene-d5	54.0	44.8-103	%REC	1	11/7/2004 12:12:00 PM
Surr: Phenol-d6	61.2	47.5-117	%REC	1	11/7/2004 12:12:00 PM

VOLATILES BY GC/MS

SW8260B

Analyst: seb

1,1,1,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,1,1-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,1,2,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,1,2-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,1-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,1-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,1-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,2,3-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,2,3-Trichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,2,4-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,2,4-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,2-Dibromo-3-chloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,2-Dibromoethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,2-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,2-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,3,5-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,3-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,3-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
1,4-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
2,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
2-Butanone	ND	40.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
2-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
2-Hexanone	ND	20.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
4-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
4-Isopropyltoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
4-Methyl-2-pentanone	ND	40.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Acetone	ND	100	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Benzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Bromobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Bromochloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Bromodichloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Bromoform	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Bromomethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Carbon disulfide	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Carbon tetrachloride	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Chlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Chloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

VOLATILES BY GC/MS

SW8260B

Analyst: **seb**

Chloroform	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Chloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
cis-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
cis-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Dibromochloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Dibromomethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Dichlorodifluoromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Ethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Hexachlorobutadiene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Isopropylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
m,p-Xylene	ND	20.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Methyl tert-butyl ether	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Methylene chloride	66.1	50.0	P,HT	µg/Kg	1	12/1/2004 9:45:00 PM
n-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
n-Propylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Naphthalene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
o-Xylene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
sec-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Styrene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
tert-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Tetrachloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Toluene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
trans-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
trans-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Trichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Trichlorofluoromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Vinyl chloride	ND	10.0	HT	µg/Kg	1	12/1/2004 9:45:00 PM
Surr: 1,2-Dichloroethane-d4	75.4	71.5-112	HT	%REC	1	12/1/2004 9:45:00 PM
Surr: 4-Bromofluorobenzene	89.6	75.7-122	HT	%REC	1	12/1/2004 9:45:00 PM
Surr: Dibromofluoromethane	72.9	64.3-124	HT	%REC	1	12/1/2004 9:45:00 PM
Surr: Toluene-d8	75.6	74.9-120	HT	%REC	1	12/1/2004 9:45:00 PM

Lab ID: 0410156-12

Collection Date: 10/28/2004 2:45:00 PM

Client Sample ID: LW043S (5-5.5)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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HOLD PER CLIENT REQUEST

PER CLIENT

Analyst: **ADM**

Hold	HOLD				1	11/4/2004
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Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co. Lab Order: 0410156
Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-13 Collection Date: 10/28/2004 3:05:00 PM
Client Sample ID: LW043S (13-14) Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
			NWTPH-DX		Analyst: tlf	
Diesel	15100	88.0		mg/Kg-dry	5	11/10/2004
Lube Oil	ND	293	A3	mg/Kg-dry	5	11/10/2004
Surr: o-Terphenyl	495	50-150	S,MI	%REC	5	11/10/2004
NWTPH-GX						
			NWTPH-GX		Analyst: tlf	
Gasoline	2330	29.3		mg/Kg-dry	10	11/1/2004
Surr: 4-Bromofluorobenzene	42.0	50-150	S,D	%REC	10	11/1/2004
TOTAL METALS BY ICP						
			E6010		Analyst: skc	
Arsenic	ND	1.56		mg/Kg	1	11/8/2004 6:17:07 PM
Chromium	12.9	0.391		mg/Kg	1	11/8/2004 6:17:07 PM
Copper	12.2	0.781		mg/Kg	1	11/6/2004 11:48:54 PM
Lead	ND	1.56		mg/Kg	1	11/6/2004 11:48:54 PM
Nickel	14.4	0.391		mg/Kg	1	11/6/2004 11:48:54 PM
Zinc	47.3	0.781		mg/Kg	1	11/6/2004 11:48:54 PM
SEMIVOLATILE ORGANICS BY GC/MS						
			SW8270D		Analyst: bda	
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 12:42:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 12:42:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 12:42:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 12:42:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 12:42:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 12:42:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 12:42:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 12:42:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 12:42:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 12:42:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 12:42:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 12:42:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 12:42:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 12:42:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 12:42:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 12:42:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Benzoic Acid	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 12:42:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 12:42:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 12:42:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 12:42:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 12:42:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 12:42:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 12:42:00 PM
Phenanthrene	9050	334	µg/Kg	5	11/8/2004 7:24:00 PM
Phenol	ND	133	µg/Kg	1	11/7/2004 12:42:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/7/2004 12:42:00 PM
Surr: 2,4,6-Tribromophenol	47.2	57.8-119	S %REC	1	11/7/2004 12:42:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	32.5	52.6-93.2	S	%REC	1	11/7/2004 12:42:00 PM
Surr: 2-Fluorophenol	75.2	40.7-111		%REC	1	11/7/2004 12:42:00 PM
Surr: 4-Terphenyl-d14	96.3	49.8-118		%REC	1	11/7/2004 12:42:00 PM
Surr: Nitrobenzene-d5	132	44.8-103	S	%REC	1	11/7/2004 12:42:00 PM
Surr: Phenol-d6	71.8	47.5-117		%REC	1	11/7/2004 12:42:00 PM

VOLATILES BY GC/MS

SW8260B

Analyst: seb

1,1,1,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,1,1-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,1,2,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,1,2-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,1-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,1-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,1-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,2,3-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,2,3-Trichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,2,4-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,2,4-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,2-Dibromo-3-chloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,2-Dibromoethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,2-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,2-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,3,5-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,3-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,3-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
1,4-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
2,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
2-Butanone	ND	40.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
2-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
2-Hexanone	942	200	HT	µg/Kg	10	12/2/2004 1:10:00 AM
4-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
4-Isopropyltoluene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
4-Methyl-2-pentanone	ND	40.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Acetone	ND	100	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Benzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Bromobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Bromochloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Bromodichloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Bromoform	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Bromomethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Carbon disulfide	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Carbon tetrachloride	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Chlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Chloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

VOLATILES BY GC/MS

SW8260B

Analyst: seb

Chloroform	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Chloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
cis-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
cis-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Dibromochloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Dibromomethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Dichlorodifluoromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Ethylbenzene	22.4	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Hexachlorobutadiene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Isopropylbenzene	2050	100	HT	µg/Kg	10	12/2/2004 1:10:00 AM
m,p-Xylene	35.7	20.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Methyl tert-butyl ether	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Methylene chloride	65.0	50.0	P,HT	µg/Kg	1	12/2/2004 2:52:00 AM
n-Butylbenzene	5460	1000	HT	µg/Kg	100	12/1/2004 11:27:00 PM
n-Propylbenzene	10900	1000	HT	µg/Kg	100	12/1/2004 11:27:00 PM
Naphthalene	32.2	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
o-Xylene	32.2	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
sec-Butylbenzene	2100	100	HT	µg/Kg	10	12/2/2004 1:10:00 AM
Styrene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
tert-Butylbenzene	51.2	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Tetrachloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Toluene	23.8	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
trans-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
trans-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Trichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Trichlorofluoromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Vinyl chloride	ND	10.0	HT	µg/Kg	1	12/2/2004 2:52:00 AM
Surr: 1,2-Dichloroethane-d4	75.9	71.5-112	HT	%REC	1	12/2/2004 2:52:00 AM
Surr: 4-Bromofluorobenzene	305	75.7-122	S,MI	%REC	1	12/2/2004 2:52:00 AM
Surr: Dibromofluoromethane	72.4	64.3-124	HT	%REC	1	12/2/2004 2:52:00 AM
Surr: Toluene-d8	83.3	74.9-120	HT	%REC	1	12/2/2004 2:52:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-14

Collection Date: 10/28/2004 11:30:00 AM

Client Sample ID: LW044S (0-0.5)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
		NWTPH-DX				Analyst: tlf
Diesel	ND	17.0		mg/Kg-dry	1	11/8/2004
Lube Oil	ND	56.6		mg/Kg-dry	1	11/8/2004
Surr: o-Terphenyl	82.0	50-150		%REC	1	11/8/2004
NWTPH-GX						
		NWTPH-GX				Analyst: tlf
Gasoline	48.1	2.83		mg/Kg-dry	1	11/1/2004
Surr: 4-Bromofluorobenzene	123	50-150		%REC	1	11/1/2004
TOTAL METALS BY ICP						
		E6010				Analyst: skc
Arsenic	ND	1.72		mg/Kg	1	11/8/2004 6:22:25 PM
Chromium	89.7	4.31		mg/Kg	10	11/9/2004 7:15:23 PM
Copper	19.7	0.862		mg/Kg	1	11/6/2004 11:54:15 PM
Lead	55.6	1.72		mg/Kg	1	11/6/2004 11:54:15 PM
Nickel	43.4	4.31		mg/Kg	10	11/9/2004 7:15:23 PM
Zinc	158	8.62		mg/Kg	10	11/9/2004 7:15:23 PM
SEMIVOLATILE ORGANICS BY GC/MS						
		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 1:13:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 1:13:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 1:13:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 1:13:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 1:13:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 1:13:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 1:13:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 1:13:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 1:13:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 1:13:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 1:13:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 1:13:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 1:13:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 1:13:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 1:13:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 1:13:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Benzoic Acid	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 1:13:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 1:13:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 1:13:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 1:13:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 1:13:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 1:13:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 1:13:00 PM
Phenanthrene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Phenol	ND	133	µg/Kg	1	11/7/2004 1:13:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/7/2004 1:13:00 PM
Surr: 2,4,6-Tribromophenol	64.0	57.8-119	%REC	1	11/7/2004 1:13:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	81.4	52.6-93.2	%REC	1	11/7/2004 1:13:00 PM
Surr: 2-Fluorophenol	61.2	40.7-111	%REC	1	11/7/2004 1:13:00 PM
Surr: 4-Terphenyl-d14	74.0	49.8-118	%REC	1	11/7/2004 1:13:00 PM
Surr: Nitrobenzene-d5	58.5	44.8-103	%REC	1	11/7/2004 1:13:00 PM
Surr: Phenol-d6	66.5	47.5-117	%REC	1	11/7/2004 1:13:00 PM

VOLATILES BY GC/MS

SW8260B

Analyst: seb

1,1,1,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,1,1-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,1,2,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,1,2-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,1-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,1-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,1-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,2,3-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,2,3-Trichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,2,4-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,2,4-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,2-Dibromo-3-chloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,2-Dibromoethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,2-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,2-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,3,5-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,3-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,3-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
1,4-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
2,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
2-Butanone	ND	40.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
2-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
2-Hexanone	ND	20.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
4-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
4-Isopropyltoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
4-Methyl-2-pentanone	ND	40.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Acetone	ND	100	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Benzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Bromobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Bromochloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Bromodichloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Bromoform	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Bromomethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Carbon disulfide	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Carbon tetrachloride	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Chlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Chloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

VOLATILES BY GC/MS

SW8260B

Analyst: seb

Chloroform	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Chloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
cis-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
cis-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Dibromochloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Dibromomethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Dichlorodifluoromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Ethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Hexachlorobutadiene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Isopropylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
m,p-Xylene	ND	20.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Methyl tert-butyl ether	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Methylene chloride	67.3	50.0	P,HT	µg/Kg	1	12/1/2004 10:19:00 PM
n-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
n-Propylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Naphthalene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
o-Xylene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
sec-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Styrene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
tert-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Tetrachloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Toluene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
trans-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
trans-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Trichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Trichlorofluoromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Vinyl chloride	ND	10.0	HT	µg/Kg	1	12/1/2004 10:19:00 PM
Surr: 1,2-Dichloroethane-d4	78.9	71.5-112	HT	%REC	1	12/1/2004 10:19:00 PM
Surr: 4-Bromofluorobenzene	88.3	75.7-122	HT	%REC	1	12/1/2004 10:19:00 PM
Surr: Dibromofluoromethane	76.4	64.3-124	HT	%REC	1	12/1/2004 10:19:00 PM
Surr: Toluene-d8	81.2	74.9-120	HT	%REC	1	12/1/2004 10:19:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

Lab ID: 0410156-15
Client Sample ID: LW044S (1-1.5)

Collection Date: 10/28/2004 11:35:00 AM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
		NWTPH-DX				Analyst: tlf
Diesel	ND	16.7		mg/Kg-dry	1	11/8/2004
Lube Oil	ND	55.5		mg/Kg-dry	1	11/8/2004
Surr: o-Terphenyl	88.6	50-150		%REC	1	11/8/2004
NWTPH-GX						
		NWTPH-GX				Analyst: tlf
Gasoline	8.44	2.78		mg/Kg-dry	1	11/1/2004
Surr: 4-Bromofluorobenzene	109	50-150		%REC	1	11/1/2004
TOTAL METALS BY ICP						
		E6010				Analyst: skc
Arsenic	ND	1.72		mg/Kg	1	11/8/2004 6:27:42 PM
Chromium	14.3	0.431		mg/Kg	1	11/8/2004 6:27:42 PM
Copper	11.8	0.862		mg/Kg	1	11/6/2004 11:59:35 PM
Lead	ND	1.72		mg/Kg	1	11/6/2004 11:59:35 PM
Nickel	15.0	0.431		mg/Kg	1	11/6/2004 11:59:35 PM
Zinc	49.3	0.862		mg/Kg	1	11/6/2004 11:59:35 PM
SEMIVOLATILE ORGANICS BY GC/MS						
		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 1:43:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 1:43:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 1:43:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 1:43:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 1:43:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 1:43:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 1:43:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 1:43:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 1:43:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 1:43:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 1:43:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 1:43:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 1:43:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 1:43:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 1:43:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 1:43:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/7/2004 1:43:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 1:43:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 1:43:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 1:43:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 1:43:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 1:43:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 1:43:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 1:43:00 PM
Phenanthrene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Phenol	ND	133	µg/Kg	1	11/7/2004 1:43:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/7/2004 1:43:00 PM
Surr: 2,4,6-Tribromophenol	54.2	57.8-119	S %REC	1	11/7/2004 1:43:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	62.6	52.6-93.2	%REC	1	11/7/2004 1:43:00 PM
Surr: 2-Fluorophenol	49.5	40.7-111	%REC	1	11/7/2004 1:43:00 PM
Surr: 4-Terphenyl-d14	68.0	49.8-118	%REC	1	11/7/2004 1:43:00 PM
Surr: Nitrobenzene-d5	48.7	44.8-103	%REC	1	11/7/2004 1:43:00 PM
Surr: Phenol-d6	48.8	47.5-117	%REC	1	11/7/2004 1:43:00 PM

VOLATILES BY GC/MS

SW8260B

Analyst: seb

1,1,1,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,1,1-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,1,2,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,1,2-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,1-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,1-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,1-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,2,3-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,2,3-Trichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,2,4-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,2,4-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,2-Dibromo-3-chloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,2-Dibromoethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,2-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,2-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,3,5-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,3-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,3-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
1,4-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
2,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
2-Butanone	ND	40.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
2-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
2-Hexanone	ND	20.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
4-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
4-Isopropyltoluene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
4-Methyl-2-pentanone	ND	40.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Acetone	ND	100	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Benzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Bromobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Bromochloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Bromodichloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Bromoform	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Bromomethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Carbon disulfide	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Carbon tetrachloride	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Chlorobenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Chloroethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

VOLATILES BY GC/MS

SW8260B

Analyst: seb

Chloroform	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Chloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
cis-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
cis-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Dibromochloromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Dibromomethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Dichlorodifluoromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Ethylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Hexachlorobutadiene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Isopropylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
m,p-Xylene	ND	20.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Methyl tert-butyl ether	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Methylene chloride	60.0	50.0	P,HT	µg/Kg	1	12/1/2004 10:53:00 PM
n-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
n-Propylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Naphthalene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
o-Xylene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
sec-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Styrene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
tert-Butylbenzene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Tetrachloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Toluene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
trans-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
trans-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Trichloroethene	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Trichlorofluoromethane	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Vinyl chloride	ND	10.0	HT	µg/Kg	1	12/1/2004 10:53:00 PM
Surr: 1,2-Dichloroethane-d4	79.9	71.5-112	HT	%REC	1	12/1/2004 10:53:00 PM
Surr: 4-Bromofluorobenzene	91.3	75.7-122	HT	%REC	1	12/1/2004 10:53:00 PM
Surr: Dibromofluoromethane	78.7	64.3-124	HT	%REC	1	12/1/2004 10:53:00 PM
Surr: Toluene-d8	76.5	74.9-120	HT	%REC	1	12/1/2004 10:53:00 PM

Lab ID: 0410156-16

Collection Date: 10/28/2004 11:50:00 AM

Client Sample ID: LW044S (5-5.5)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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HOLD PER CLIENT REQUEST

PER CLIENT

Analyst: ADM

Hold	HOLD				1	11/4/2004
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Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.

Lab Order: 0410156

Project: NW Terminal Additional Well Install Phase III

Lab ID: 0410156-17

Collection Date: 10/28/2004 12:10:00 PM

Client Sample ID: LW044S (12.5-13.5)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
		NWTPH-DX				Analyst: tlf
Diesel	3500	17.7		mg/Kg-dry	1	11/8/2004
Lube Oil	ND	59.0		mg/Kg-dry	1	11/8/2004
Surr: o-Terphenyl	103	50-150		%REC	1	11/8/2004
NWTPH-GX						
		NWTPH-GX				Analyst: tlf
Gasoline	10800	148		mg/Kg-dry	50	11/2/2004
Surr: 4-Bromofluorobenzene	92.2	50-150		%REC	50	11/2/2004
TOTAL METALS BY ICP						
		E6010				Analyst: skc
Arsenic	ND	1.79		mg/Kg	1	11/8/2004 6:32:59 PM
Chromium	12.1	0.446		mg/Kg	1	11/8/2004 6:32:59 PM
Copper	11.8	0.893		mg/Kg	1	11/7/2004 12:04:56 AM
Lead	ND	1.79		mg/Kg	1	11/7/2004 12:04:56 AM
Nickel	12.8	0.446		mg/Kg	1	11/7/2004 12:04:56 AM
Zinc	43.8	0.893		mg/Kg	1	11/7/2004 12:04:56 AM
SEMIVOLATILE ORGANICS BY GC/MS						
		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 2:14:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 2:14:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 2:14:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/7/2004 2:14:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/7/2004 2:14:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/7/2004 2:14:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/7/2004 2:14:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/7/2004 2:14:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/7/2004 2:14:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/7/2004 2:14:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/7/2004 2:14:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/7/2004 2:14:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/7/2004 2:14:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/7/2004 2:14:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/7/2004 2:14:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/7/2004 2:14:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/7/2004 2:14:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/7/2004 2:14:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/7/2004 2:14:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Bis(2-ethylhexyl)phthalate	159	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Fluorene	284	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/7/2004 2:14:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/7/2004 2:14:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/7/2004 2:14:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/7/2004 2:14:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/7/2004 2:14:00 PM
Phenanthrene	215	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Phenol	ND	133	µg/Kg	1	11/7/2004 2:14:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/7/2004 2:14:00 PM
Surr: 2,4,6-Tribromophenol	47.5	57.8-119	S %REC	1	11/7/2004 2:14:00 PM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	69.4	52.6-93.2	%REC	1	11/7/2004 2:14:00 PM
Surr: 2-Fluorophenol	86.6	40.7-111	%REC	1	11/7/2004 2:14:00 PM
Surr: 4-Terphenyl-d14	64.7	49.8-118	%REC	1	11/7/2004 2:14:00 PM
Surr: Nitrobenzene-d5	157	44.8-103	S %REC	1	11/7/2004 2:14:00 PM
Surr: Phenol-d6	54.3	47.5-117	%REC	1	11/7/2004 2:14:00 PM

VOLATILES BY GC/MS

SW8260B

Analyst: seb

1,1,1,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,1,1-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,1,2,2-Tetrachloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,1,2-Trichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,1-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,1-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,1-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,2,3-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,2,3-Trichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,2,4-Trichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,2,4-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,2-Dibromo-3-chloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,2-Dibromoethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,2-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,2-Dichloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,3,5-Trimethylbenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,3-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,3-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
1,4-Dichlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
2,2-Dichloropropane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
2-Butanone	ND	40.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
2-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
2-Hexanone	ND	20.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
4-Chlorotoluene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
4-Isopropyltoluene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
4-Methyl-2-pentanone	ND	40.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Acetone	ND	100	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Benzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Bromobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Bromochloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Bromodichloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Bromoform	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Bromomethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Carbon disulfide	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Carbon tetrachloride	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Chlorobenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Chloroethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM

Specialty Analytical

Date: 06-Dec-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0410156

VOLATILES BY GC/MS

SW8260B

Analyst: seb

Chloroform	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Chloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
cis-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
cis-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Dibromochloromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Dibromomethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Dichlorodifluoromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Ethylbenzene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Hexachlorobutadiene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Isopropylbenzene	3950	1000	HT	µg/Kg	100	12/2/2004 12:02:00 AM
m,p-Xylene	31.2	20.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Methyl tert-butyl ether	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Methylene chloride	62.0	50.0	P,HT	µg/Kg	1	12/2/2004 3:27:00 AM
n-Butylbenzene	206	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
n-Propylbenzene	5740	1000	HT	µg/Kg	100	12/2/2004 12:02:00 AM
Naphthalene	390	100	HT	µg/Kg	10	12/2/2004 1:44:00 AM
Naphthalene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
o-Xylene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
sec-Butylbenzene	3980	1000	HT	µg/Kg	100	12/2/2004 12:02:00 AM
Styrene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
tert-Butylbenzene	32.9	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Tetrachloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Toluene	17.9	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
trans-1,2-Dichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
trans-1,3-Dichloropropene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Trichloroethene	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Trichlorofluoromethane	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Vinyl chloride	ND	10.0	HT	µg/Kg	1	12/2/2004 3:27:00 AM
Surr: 1,2-Dichloroethane-d4	76.1	71.5-112	HT	%REC	1	12/2/2004 3:27:00 AM
Surr: 4-Bromofluorobenzene	409	75.7-122	S,MI	%REC	1	12/2/2004 3:27:00 AM
Surr: Dibromofluoromethane	75.5	64.3-124	HT	%REC	1	12/2/2004 3:27:00 AM
Surr: Toluene-d8	81.7	74.9-120	HT	%REC	1	12/2/2004 3:27:00 AM

delete per med at Specialty

See email in this package.

ASH 12/15/04

10 ND is correct

CLIENT: Time Oil Co.
 Work Order: 0410156
 Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	RunID:	TJAIRIS_041106F	
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/6/2004	SeqNo:	291023	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		ND	2.00									
Chromium		ND	0.500									
Copper		ND	1.00									
Lead		ND	2.00									
Nickel		ND	0.500									
Zinc		0.38	1.00									J

Sample ID	LCS	SampType: LCS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/1/2004	Run ID: TJAIRIS_041106F					
Client ID: ZZZZZ	Batch ID: 12163	TestNo: E6010	Analysis Date: 11/6/2004	SeqNo: 291024							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	99.72	2.00	100	0	99.7	85.1	107	0	0		
Chromium	24.72	0.500	25	0	98.9	84	113	0	0		
Copper	49.25	1.00	50	0	98.5	91.3	111	0	0		
Lead	91.67	2.00	100	0	91.7	84.9	109	0	0		
Nickel	24.57	0.500	25	0	98.3	85.5	112	0	0		
Zinc	50.19	1.00	50	0.38	99.6	86.8	112	0	0		

Sample ID	0410153-01BMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041106F	
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/6/2004	SeqNo:	291027	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		85.29	1.72	86.21	0	98.9	86.1	109	0	0		
Lead		129.8	1.72	86.21	74.9	63.7	92.1	104	0	0		S,RP

Sample ID	0410153-01BMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041109C	
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/9/2004	SeqNo:	291574	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0410153-01BMS	SampType: MS	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/1/2004	Run ID: TJAIRIS_041109C					
Client ID: ZZZZZ	Batch ID: 12163	TestNo: E6010	Analysis Date: 11/9/2004			SeqNo: 291574					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	747.4	21.6	21.55	890.3	-663	75	121	0	0		SMC
Copper	347.4	43.1	43.1	534.3	-434	75.1	126	0	0		SMC
Nickel	144.4	21.6	21.55	125.4	88.1	89.3	105	0	0		SMC
Zinc	1117	43.1	43.1	1358	-560	86.2	113	0	0		SMC

Sample ID	0410153-01BMSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/1/2004	Run ID: TJAIRIS_041106F					
Client ID: ZZZZZ	Batch ID: 12163	TestNo: E6010	Analysis Date: 11/6/2004	SeqNo: 291028							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	89.75	1.67	83.33	0	108	86.1	109	85.29	5.09	20	
Lead	146.2	1.67	83.33	74.9	85.6	92.1	104	129.8	11.9	20	S,RP

Sample ID	0410153-01BMSD	SampType: MSD	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/1/2004	Run ID: TJAIRIS_041109C					
Client ID: ZZZZZ	Batch ID: 12163	TestNo: E6010	Analysis Date: 11/9/2004	SeqNo: 291575							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium	826.7	20.8	20.83	890.3	-306	75	121	747.4	10.1	20	S,MC
Copper	447.1	41.7	41.67	534.3	-209	75.1	126	347.4	25.1	20	SR,MC
Nickel	152.1	20.8	20.83	125.4	128	89.3	105	144.4	5.19	20	S,MC
Zinc	1435	41.7	41.67	1358	184	86.2	113	1117	24.9	20	SR,MC

Sample ID	0410153-01BDUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041106F	
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/6/2004	SeqNo:	291026	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		2.922	1.72	0	0	0	0	0	0	200	20	RF
Lead		72.04	1.72	0	0	0	0	0	74.9	3.88	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0410153-01BDUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041109C
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/9/2004	SeqNo:	291573
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	1005	21.6	0	0	0	0	0	890.3	12.1	20	
Copper	585.8	43.1	0	0	0	0	0	534.3	9.20	20	
Nickel	143.1	21.6	0	0	0	0	0	125.4	13.2	20	
Zinc	1531	43.1	0	0	0	0	0	1358	12.0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041106F
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/6/2004	SeqNo:	291032
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	104.6	2.00	100	0	105	90	110	0	0		
Chromium	25.86	0.500	25	0	103	90	110	0	0		
Copper	49.87	1.00	50	0	99.7	90	110	0	0		
Lead	98.05	2.00	100	0	98	90	110	0	0		
Nickel	25.75	0.500	25	0	103	90	110	0	0		
Zinc	50.83	1.00	50	0	102	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041106F
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/6/2004	SeqNo:	291043
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	104.5	2.00	100	0	104	90	110	0	0		
Chromium	26.05	0.500	25	0	104	90	110	0	0		
Copper	50.65	1.00	50	0	101	90	110	0	0		
Lead	99.35	2.00	100	0	99.4	90	110	0	0		
Nickel	25.83	0.500	25	0	103	90	110	0	0		
Zinc	51.07	1.00	50	0	102	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041106F
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/7/2004	SeqNo:	291051
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit S - Spike Recovery outside accepted recovery limits B - Analyte detected in the associated Method Blank
 J - Analyte detected below quantitation limits R - RPD outside accepted recovery limits

CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041106F			
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/7/2004	SeqNo:	291051			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Copper	52.91	1.00	50	0	106	90	110	0	0		
Lead	104.6	2.00	100	0	105	90	110	0	0		
Nickel	27.34	0.500	25	0	109	90	110	0	0		
Zinc	53.29	1.00	50	0	107	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041109C			
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/9/2004	SeqNo:	291581			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	24.23	0.500	25	0	96.9	90	110	0	0		
Copper	51.33	1.00	50	0	103	90	110	0	0		
Nickel	25.99	0.500	25	0	104	90	110	0	0		
Zinc	51.99	1.00	50	0	104	90	110	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041109C			
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/9/2004	SeqNo:	291584			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	25.19	0.500	25	0	101	90	110	0	0		
Copper	51.34	1.00	50	0	103	90	110	0	0		
Nickel	26.28	0.500	25	0	105	90	110	0	0		
Zinc	52.55	1.00	50	0	105	90	110	0	0		

Sample ID	ICB	SampType:	ICB	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041109C		
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/9/2004	SeqNo:	291571		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	ND	0.500	0	0	0	0	0	0	0		
Copper	ND	1.00	0	0	0	0	0	0	0		
Nickel	ND	0.500	0	0	0	0	0	0	0		
Zinc	ND	1.00	0	0	0	0	0	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041106F		
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/6/2004	SeqNo:	291020		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	98.25	2.00	100	0	98.2	90	110	0	0
Chromium	24.18	0.500	25	0	96.7	90	110	0	0
Copper	50.13	1.00	50	0	100	90	110	0	0
Lead	92.15	2.00	100	0	92.2	90	110	0	0
Nickel	23.91	0.500	25	0	95.6	90	110	0	0
Zinc	48.51	1.00	50	0	97	90	110	0	0

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	TJAIRIS_041109C		
Client ID:	ZZZZZ	Batch ID:	12163	TestNo:	E6010			Analysis Date:	11/9/2004	SeqNo:	291570		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Chromium	24.25	0.500	25	0	97	90	110	0	0
Copper	51.7	1.00	50	0	103	90	110	0	0
Nickel	25.45	0.500	25	0	102	90	110	0	0
Zinc	51.59	1.00	50	0	103	90	110	0	0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973J_041201C		
Client ID:	ZZZZZ	Batch ID:	12342	TestNo:	SW8260B			Analysis Date:	12/1/2004	SeqNo:	295985		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1,1,2-Tetrachloroethane	ND	10.0
1,1,1-Trichloroethane	ND	10.0
1,1,2,2-Tetrachloroethane	ND	10.0
1,1,2-Trichloroethane	ND	10.0
1,1-Dichloroethane	ND	10.0
1,1-Dichloroethene	ND	10.0
1,1-Dichloropropene	ND	10.0
1,2,3-Trichlorobenzene	ND	10.0
1,2,3-Trichloropropane	ND	10.0
1,2,4-Trichlorobenzene	ND	10.0
1,2,4-Trimethylbenzene	ND	10.0
1,2-Dibromo-3-chloropropane	ND	10.0
1,2-Dibromoethane	ND	10.0
1,2-Dichlorobenzene	ND	10.0
1,2-Dichloroethane	ND	10.0
1,2-Dichloropropane	ND	10.0
1,3,5-Trimethylbenzene	ND	10.0
1,3-Dichlorobenzene	ND	10.0
1,3-Dichloropropane	ND	10.0
1,4-Dichlorobenzene	ND	10.0
2,2-Dichloropropane	ND	10.0
2-Butanone	ND	40.0
2-Chlorotoluene	ND	10.0
2-Hexanone	ND	20.0
4-Chlorotoluene	ND	10.0
4-Isopropyltoluene	ND	10.0
4-Methyl-2-pentanone	ND	40.0
Acetone	ND	100
Benzene	ND	10.0
Bromobenzene	ND	10.0
Bromochloromethane	ND	10.0

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973J_041201C		
Client ID:	ZZZZZ	Batch ID:	12342	TestNo:	SW8260B			Analysis Date:	12/1/2004	SeqNo:	295985		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Bromodichloromethane	ND	10.0
Bromoform	ND	10.0
Bromomethane	ND	10.0
Carbon disulfide	ND	10.0
Carbon tetrachloride	ND	10.0
Chlorobenzene	ND	10.0
Chloroethane	ND	10.0
Chloroform	ND	10.0
Chloromethane	ND	10.0
cis-1,2-Dichloroethene	ND	10.0
cis-1,3-Dichloropropene	ND	10.0
Dibromochloromethane	ND	10.0
Dibromomethane	ND	10.0
Dichlorodifluoromethane	ND	10.0
Ethylbenzene	ND	10.0
Hexachlorobutadiene	ND	10.0
Isopropylbenzene	ND	10.0
m,p-Xylene	ND	20.0
Methyl tert-butyl ether	ND	10.0
Methylene chloride	ND	50.0
n-Butylbenzene	ND	10.0
n-Propylbenzene	ND	10.0
Naphthalene	ND	10.0
o-Xylene	ND	10.0
sec-Butylbenzene	ND	10.0
Styrene	ND	10.0
tert-Butylbenzene	ND	10.0
Tetrachloroethene	ND	10.0
Toluene	ND	10.0
trans-1,2-Dichloroethene	ND	10.0
trans-1,3-Dichloropropene	ND	10.0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973J_041201C		
Client ID:	ZZZZZ	Batch ID:	12342	TestNo:	SW8260B			Analysis Date:	12/1/2004	SeqNo:	295985		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Trichloroethene	ND	10.0												
Trichlorofluoromethane	ND	10.0												
Vinyl chloride	ND	10.0												
Surr:1,2-Dichloroethane-d4	99.87	0	100	0	99.9	71.5	112	0	0					
Surr:4-Bromofluorobenzene	97.85	0	100	0	97.8	75.7	122	0	0					
Surr:Dibromofluoromethane	102.3	0	100	0	102	64.3	124	0	0					
Surr:Toluene-d8	75.67	0	100	0	75.7	74.9	120	0	0					

Sample ID	LCS	SampType:	LCS	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973J_041201C		
Client ID:	ZZZZZ	Batch ID:	12342	TestNo:	SW8260B			Analysis Date:	12/1/2004	SeqNo:	295984		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene		67.69		10.0	80	0	84.6	65.4	133	0	0		
Benzene		66.05		10.0	80	0	82.6	78	123	0	0		
Chlorobenzene		65.84		10.0	80	0	82.3	79.5	125	0	0		
Toluene		63.66		10.0	80	0	79.6	77.5	132	0	0		
Trichloroethene		68.58		10.0	80	0	85.7	72.4	124	0	0		

Sample ID	0411136-03BMS	SampType:	MS	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		RunID:	5973J_041201C	
Client ID:	ZZZZZ	Batch ID:	12342	TestNo:	SW8260B			Analysis Date:	12/1/2004	SeqNo:	295987	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene		46.56	10.0	40	0	116	69.2	158	0	0		
Benzene		42.58	10.0	40	0	106	71.7	147	0	0		
Chlorobenzene		38.24	10.0	40	1.21	92.6	85.6	148	0	0		
Toluene		39.72	10.0	40	1.25	96.2	75.8	153	0	0		
Trichloroethene		46.35	10.0	40	1.24	113	77.1	138	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	0411136-03BMSD	SampType:	MSD	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973J_041201C		
Client ID:	ZZZZZ	Batch ID:	12342	TestNo:	SW8260B			Analysis Date:	12/1/2004	SeqNo:	295988		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene	42.18	10.0	40	0	105	69.2	158	46.56	9.87	20
Benzene	39.93	10.0	40	0	99.8	71.7	147	42.58	6.42	20
Chlorobenzene	37.18	10.0	40	1.21	89.9	85.6	148	38.24	2.81	20
Toluene	39.98	10.0	40	1.25	96.8	75.8	153	39.72	0.652	20
Trichloroethene	43.54	10.0	40	1.24	106	77.1	138	46.35	6.25	20

Sample ID	CCV	SampType:	CCV	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973J_041201C			
Client ID:	ZZZZZ	Batch ID:	12342	TestNo:	SW8260B			Analysis Date:	12/1/2004	SeqNo:	295983			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene	33.03	10.0	40	0	82.6	80	120	0	0
1,2-Dichloropropane	39.96	10.0	40	0	99.9	80	120	0	0
Chloroform	41.64	10.0	40	0	104	80	120	0	0
Ethylbenzene	35.42	10.0	40	0	88.6	80	120	0	0
Toluene	33.24	10.0	40	0	83.1	80	120	0	0
Vinyl chloride	45.06	10.0	40	0	113	80	120	0	0

Sample ID	CCV	SampType:	CCV	TestCode:	8260_S	Units:	µg/Kg	Prep Date:		Run ID:	5973J_041201C		
Client ID:	ZZZZZ	Batch ID:	12342	TestNo:	SW8260B			Analysis Date:	12/1/2004	SeqNo:	296021		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,1-Dichloroethene	32.44	10.0	40	0	81.1	80	120	0	0
1,2-Dichloropropane	38.14	10.0	40	0	95.4	80	120	0	0
Chloroform	36.13	10.0	40	0	90.3	80	120	0	0
Ethylbenzene	34.53	10.0	40	0	86.3	80	120	0	0
Toluene	36.11	10.0	40	0	90.3	80	120	0	0
Vinyl chloride	45.96	10.0	40	0	115	80	120	0	0

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8260_S

Sample ID	CCV	SampType: CCV	TestCode: 8260_S	Units: µg/Kg	Prep Date:	Run ID: 5973J_041201C					
Client ID: ZZZZZ	Batch ID: 12342	TestNo: SW8260B	Analysis Date: 12/2/2004	SeqNo: 296417							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,1-Dichloroethene	35.17	10.0	40	0	87.9	80	120	0	0		
1,2-Dichloropropane	34.29	10.0	40	0	85.7	80	120	0	0		
Chloroform	34.44	10.0	40	0	86.1	80	120	0	0		
Ethylbenzene	32.47	10.0	40	0	81.2	80	120	0	0		
Toluene	34.52	10.0	40	0	86.3	80	120	0	0		
Vinyl chloride	39.5	10.0	40	0	98.8	80	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12198	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/4/2004	Run ID:	5973G_041107A
Client ID:	ZZZZZ	Batch ID:	12198	TestNo:	SW8270D			Analysis Date:	11/7/2004	SeqNo:	290728
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	ND	66.7									
1,2-Dichlorobenzene	ND	66.7									
1,3-Dichlorobenzene	ND	66.7									
1,4-Dichlorobenzene	ND	66.7									
2,4,5-Trichlorophenol	ND	333									
2,4,6-Trichlorophenol	ND	333									
2,4-Dichlorophenol	ND	200									
2,4-Dimethylphenol	ND	200									
2,4-Dinitrophenol	ND	333									
2,4-Dinitrotoluene	ND	333									
2,6-Dinitrotoluene	ND	333									
2-Chloronaphthalene	ND	66.7									
2-Chlorophenol	ND	66.7									
2-Methylnaphthalene	7.667	66.7									J
2-Methylphenol	ND	133									
2-Nitroaniline	ND	333									
2-Nitrophenol	ND	333									
3,3-Dichlorobenzidine	ND	333									
3-&4-Methylphenol	ND	333									
3-Nitroaniline	ND	333									
4,6-Dinitro-2-methylphenol	ND	333									
4-Bromophenyl phenyl ether	ND	66.7									
4-Chloro-3-methylphenol	ND	133									
4-Chloroaniline	ND	200									
4-Chlorophenyl phenyl ether	ND	66.7									
4-Nitroaniline	ND	333									
4-Nitrophenol	ND	333									
Acenaphthene	ND	66.7									
Acenaphthylene	ND	66.7									
Anthracene	ND	66.7									
Benz(a)anthracene	ND	66.7									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

Work Order: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12198	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/4/2004	RunID:	5973G_041107A
Client ID:	ZZZZZ	Batch ID:	12198	TestNo:	SW8270D			Analysis Date:	11/7/2004	SeqNo:	290728
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	ND	66.7									
Benzo(b)fluoranthene	ND	66.7									
Benzo(g,h,i)perylene	ND	66.7									
Benzo(k)fluoranthene	ND	66.7									
Benzoic Acid	ND	66.7									
Benzyl Alcohol	ND	333									
Bis(2-chloroethoxy)methane	ND	66.7									
Bis(2-chloroethyl)ether	ND	133									
Bis(2-chloroisopropyl)ether	ND	66.7									
Bis(2-ethylhexyl)phthalate	ND	66.7									
Butyl benzyl phthalate	ND	66.7									
Carbazole	ND	66.7									
Chrysene	ND	66.7									
Di-n-butylphthalate	ND	66.7									
Di-n-octylphthalate	ND	66.7									
Dibenz(a,h)anthracene	ND	66.7									
Dibenzofuran	ND	66.7									
Diethylphthalate	ND	66.7									
Dimethylphthalate	ND	66.7									
Fluoranthene	ND	66.7									
Fluorene	ND	66.7									
Hexachlorobenzene	ND	66.7									
Hexachlorobutadiene	ND	133									
Hexachlorocyclopentadiene	ND	333									
Hexachloroethane	ND	133									
Indeno(1,2,3-cd)pyrene	ND	66.7									
Isophorone	ND	66.7									
N-Nitrosodi-n-propylamine	ND	133									
N-Nitrosodimethylamine	ND	66.7									
N-Nitrosodiphenylamine	ND	66.7									
Naphthalene	ND	66.7									

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: Time Oil Co.
 Work Order: 0410156
 Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12198	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/4/2004	Run ID:	5973G_041107A
Client ID:	ZZZZZ	Batch ID:	12198	TestNo:	SW8270D			Analysis Date:	11/7/2004	SeqNo:	290728
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Nitrobenzene	11	66.7									J
Pentachlorophenol	ND	333									
Phenanthrene	ND	66.7									
Phenol	ND	133									
Pyrene	ND	66.7									
Surr:2,4,6-Tribromophenol	2862	1.00	3333	0	85.9	57.8	119	0	0		
Surr:2-Fluorobiphenyl	3621	1.00	3333	0	109	52.6	93.2	0	0		S
Surr:2-Fluorophenol	3019	1.00	3333	0	90.6	40.7	111	0	0		
Surr:4-Terphenyl-d14	2919	1.00	3333	0	87.6	49.8	118	0	0		
Surr:Nitrobenzene-d5	2923	1.00	3333	0	87.7	44.8	103	0	0		
Surr:Phenol-d6	2951	1.00	3333	0	88.5	47.5	117	0	0		

Sample ID	MB-12368	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	12/1/2004	Run ID:	5973G_041201A
Client ID:	ZZZZZ	Batch ID:	12368	TestNo:	SW8270D			Analysis Date:	12/1/2004	SeqNo:	296311
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	ND	66.7									
1,2-Dichlorobenzene	ND	66.7									
1,3-Dichlorobenzene	ND	66.7									
1,4-Dichlorobenzene	ND	66.7									
2,4,5-Trichlorophenol	ND	333									
2,4,6-Trichlorophenol	ND	333									
2,4-Dichlorophenol	ND	200									
2,4-Dimethylphenol	ND	200									
2,4-Dinitrophenol	ND	333									
2,4-Dinitrotoluene	ND	333									
2,6-Dinitrotoluene	ND	333									
2-Chloronaphthalene	ND	66.7									
2-Chlorophenol	ND	66.7									
2-Methylnaphthalene	ND	66.7									
2-Methylphenol	ND	133									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12368	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	12/1/2004	Run ID:	5973G_041201A
Client ID:	ZZZZZ	Batch ID:	12368	TestNo:	SW8270D			Analysis Date:	12/1/2004	SeqNo:	296311
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Nitroaniline	ND	333									
2-Nitrophenol	ND	333									
3,3-Dichlorobenzidine	ND	333									
3-&4-Methylphenol	ND	333									
3-Nitroaniline	ND	333									
4,6-Dinitro-2-methylphenol	ND	333									
4-Bromophenyl phenyl ether	ND	66.7									
4-Chloro-3-methylphenol	ND	133									
4-Chloroaniline	ND	200									
4-Chlorophenyl phenyl ether	ND	66.7									
4-Nitroaniline	ND	333									
4-Nitrophenol	ND	333									
Acenaphthene	ND	66.7									
Acenaphthylene	ND	66.7									
Anthracene	ND	66.7									
Benz(a)anthracene	ND	66.7									
Benzo(a)pyrene	ND	66.7									
Benzo(b)fluoranthene	ND	66.7									
Benzo(g,h,i)perylene	ND	66.7									
Benzo(k)fluoranthene	ND	66.7									
Benzoic Acid	ND	66.7									
Benzyl Alcohol	ND	333									
Bis(2-chloroethoxy)methane	ND	66.7									
Bis(2-chloroethyl)ether	ND	133									
Bis(2-chloroisopropyl)ether	ND	66.7									
Bis(2-ethylhexyl)phthalate	20	66.7									J
Butyl benzyl phthalate	81.33	66.7									
Carbazole	ND	66.7									
Chrysene	ND	66.7									
Di-n-butylphthalate	51.33	66.7									J
Di-n-octylphthalate	ND	66.7									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12368	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	12/1/2004	Run ID:	5973G_041201A
Client ID:	ZZZZZ	Batch ID:	12368	TestNo:	SW8270D			Analysis Date:	12/1/2004	SeqNo:	296311
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	ND	66.7									
Dibenzofuran	ND	66.7									
Diethylphthalate	1091	66.7									
Dimethylphthalate	ND	66.7									
Fluoranthene	ND	66.7									
Fluorene	ND	66.7									
Hexachlorobenzene	ND	66.7									
Hexachlorobutadiene	ND	133									
Hexachlorocyclopentadiene	ND	333									
Hexachloroethane	ND	133									
Indeno(1,2,3-cd)pyrene	ND	66.7									
Isophorone	ND	66.7									
N-Nitrosodi-n-propylamine	ND	133									
N-Nitrosodimethylamine	ND	66.7									
N-Nitrosodiphenylamine	ND	66.7									
Naphthalene	ND	66.7									
Nitrobenzene	12.33	66.7									J
Pentachlorophenol	ND	333									
Phenanthrene	ND	66.7									
Phenol	ND	133									
Pyrene	ND	66.7									
Surr:2,4,6-Tribromophenol	3007	1.00	3333	0	90.2	57.8	119	0	0		
Surr:2-Fluorobiphenyl	3956	1.00	3333	0	119	52.6	93.2	0	0		S
Surr:2-Fluorophenol	3491	1.00	3333	0	105	40.7	111	0	0		
Surr:4-Terphenyl-d14	2950	1.00	3333	0	88.5	49.8	118	0	0		
Surr:Nitrobenzene-d5	3552	1.00	3333	0	107	44.8	103	0	0		S
Surr:Phenol-d6	3564	1.00	3333	0	107	47.5	117	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	LCS-12198	SampType:	LCS	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/4/2004	Run ID:	5973G_041107A
Client ID:	ZZZZZ	Batch ID:	12198	TestNo:	SW8270D			Analysis Date:	11/7/2004	SeqNo:	290729
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	984	66.7	1667	0	59	30.9	106	0	0		
1,4-Dichlorobenzene	848	66.7	1667	0	50.9	31.4	98.2	0	0		
2,4-Dinitrotoluene	1290	333	1667	0	77.4	59.7	111	0	0		
2-Chlorophenol	1078	66.7	1667	0	64.7	46.2	105	0	0		
4-Chloro-3-methylphenol	1212	133	1667	0	72.7	47.4	114	0	0		
4-Nitrophenol	1287	333	1667	0	77.2	45.3	114	0	0		
Acenaphthene	1203	66.7	1667	0	72.2	48.2	105	0	0		
N-Nitrosodi-n-propylamine	1056	133	1667	0	63.4	42.4	101	0	0		
Pentachlorophenol	1105	333	1667	0	66.3	46.8	120	0	0		
Phenol	1102	133	1667	0	66.1	51.1	103	0	0		
Pyrene	1482	66.7	1667	0	88.9	56.7	130	0	0		

Sample ID	LCS-12368	SampType:	LCS	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	12/1/2004	Run ID:	5973G_041201A
Client ID:	ZZZZZ	Batch ID:	12368	TestNo:	SW8270D			Analysis Date:	12/1/2004	SeqNo:	296313
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	1212	66.7	1667	0	72.7	30.9	106	0	0		
1,4-Dichlorobenzene	1199	66.7	1667	0	71.9	31.4	98.2	0	0		
2,4-Dinitrotoluene	1519	333	1667	0	91.1	59.7	111	0	0		
2-Chlorophenol	1429	66.7	1667	0	85.7	46.2	105	0	0		
4-Chloro-3-methylphenol	1608	133	1667	0	96.5	47.4	114	0	0		
4-Nitrophenol	1863	333	1667	0	112	45.3	114	0	0		
Acenaphthene	1434	66.7	1667	0	86	48.2	105	0	0		
N-Nitrosodi-n-propylamine	1484	133	1667	0	89	42.4	101	0	0		
Pentachlorophenol	918	333	1667	0	55.1	46.8	120	0	0		
Phenol	1515	133	1667	0	90.9	51.1	103	0	0		
Pyrene	1358	66.7	1667	0	81.5	56.7	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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BZTO104(e)023716

CLIENT: Time Oil Co.

Work Order: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	0410104-06AMS	SampType:	MS	TestCode:	8270LL_S	Units:	µg/Kg-dry	Prep Date:	11/4/2004	Run ID:	5973G_041107A
Client ID:	ZZZZZ	Batch ID:	12198	TestNo:	SW8270D			Analysis Date:	11/7/2004	SeqNo:	290730
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	975.9	92.9	2321	0	42	31.1	92.7	0	0		
1,4-Dichlorobenzene	817.1	92.9	2321	0	35.2	16.5	85.6	0	0		
2,4-Dinitrotoluene	1497	464	2321	0	64.5	43.4	118	0	0		
2-Chlorophenol	969.8	92.9	2321	0	41.8	36.8	103	0	0		
4-Chloro-3-methylphenol	1246	185	2321	0	53.7	49.5	119	0	0		
4-Nitrophenol	1020	464	2321	0	43.9	45	111	0	0		S
Acenaphthene	1441	92.9	2321	0	62.1	45.1	102	0	0		
N-Nitrosodi-n-propylamine	981.4	185	2321	0	42.3	45.6	94.1	0	0		S
Pentachlorophenol	1121	464	2321	0	48.3	36.6	112	0	0		
Phenol	1045	185	2321	0	45	37.7	107	0	0		
Pyrene	1699	92.9	2321	0	73.2	42.4	131	0	0		

Sample ID	0410156-08BMS	SampType:	MS	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	12/1/2004	Run ID:	5973G_041201A
Client ID:	LW042S(5-5.5)	Batch ID:	12368	TestNo:	SW8270D			Analysis Date:	12/2/2004	SeqNo:	296316
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	973.3	66.7	1667	0	58.4	31.1	92.7	0	0		
1,4-Dichlorobenzene	1001	66.7	1667	0	60.1	16.5	85.6	0	0		
2,4-Dinitrotoluene	1755	333	1667	0	105	43.4	118	0	0		
2-Chlorophenol	1889	66.7	1667	0	113	36.8	103	0	0		S
4-Chloro-3-methylphenol	2173	133	1667	0	130	49.5	119	0	0		S
4-Nitrophenol	1933	333	1667	0	116	45	111	0	0		S
Acenaphthene	1309	66.7	1667	0	78.5	45.1	102	0	0		
N-Nitrosodi-n-propylamine	1891	133	1667	0	113	45.6	94.1	0	0		S
Pentachlorophenol	693	333	1667	0	41.6	36.6	112	0	0		
Phenol	2252	133	1667	0	135	37.7	107	0	0		S
Pyrene	1371	66.7	1667	17.33	81.2	42.4	131	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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BZTO104(e)023717

CLIENT: Time Oil Co.
Work Order: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	0410104-06AMSD	SampType:	MSD	TestCode:	8270LL_S	Units:	µg/Kg-dry	Prep Date:	11/4/2004	Run ID:	5973G_041107A		
Client ID:	ZZZZZ	Batch ID:	12198	TestNo:	SW8270D			Analysis Date:	11/7/2004	SeqNo:	290731		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	977.7	92.9	2321	0	42.1	31.1	92.7	975.9	0.190	20	
1,4-Dichlorobenzene	853.8	92.9	2321	0	36.8	16.5	85.6	817.1	4.39	20	
2,4-Dinitrotoluene	1163	464	2321	0	50.1	43.4	118	1497	25.1	20	R
2-Chlorophenol	894.6	92.9	2321	0	38.5	36.8	103	969.8	8.07	20	
4-Chloro-3-methylphenol	1012	185	2321	0	43.6	49.5	119	1246	20.7	20	SR
4-Nitrophenol	770.2	464	2321	0	33.2	45	111	1020	27.9	20	SR
Acenaphthene	1246	92.9	2321	0	53.7	45.1	102	1441	14.5	20	
N-Nitrosodi-n-propylamine	906.2	185	2321	0	39	45.6	94.1	981.4	7.97	20	S
Pentachlorophenol	847.7	464	2321	0	36.5	36.6	112	1121	27.7	20	SR
Phenol	899.7	185	2321	0	38.8	37.7	107	1045	14.9	20	
Pyrene	1383	92.9	2321	0	59.6	42.4	131	1699	20.5	20	R

Sample ID	0410156-08BMSD	SampType:	MSD	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	12/1/2004	Run ID:	5973G_041201A		
Client ID:	LW042S(5-5.5)	Batch ID:	12368	TestNo:	SW8270D			Analysis Date:	12/2/2004	SeqNo:	296317		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,2,4-Trichlorobenzene	1022	66.7	1667	0	61.3	31.1	92.7	973.3	4.85	20	
1,4-Dichlorobenzene	1066	66.7	1667	0	63.9	16.5	85.6	1001	6.26	20	
2,4-Dinitrotoluene	1721	333	1667	0	103	43.4	118	1755	1.96	20	
2-Chlorophenol	2017	66.7	1667	0	121	36.8	103	1889	6.59	20	S
4-Chloro-3-methylphenol	2166	133	1667	0	130	49.5	119	2173	0.338	20	S
4-Nitrophenol	2117	333	1667	0	127	45	111	1933	9.07	20	S
Acenaphthene	1342	66.7	1667	0	80.5	45.1	102	1309	2.49	20	
N-Nitrosodi-n-propylamine	2019	133	1667	0	121	45.6	94.1	1891	6.56	20	S
Pentachlorophenol	779.3	333	1667	0	46.8	36.6	112	693	11.7	20	
Phenol	2365	133	1667	0	142	37.7	107	2252	4.88	20	S
Pyrene	1220	66.7	1667	17.33	72.1	42.4	131	1371	11.7	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	CCV-12198	SampType:	CCV	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_041107A			
Client ID:	ZZZZZ	Batch ID:	12198	TestNo:	SW8270D			Analysis Date:	11/7/2004	SeqNo:	290727			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,4-Dichlorobenzene	1284	66.7	1333	0	96.3	80	120	0	0					
2,4,6-Trichlorophenol	1328	333	1333	0	99.6	80	120	0	0					
2,4-Dichlorophenol	1358	200	1333	0	102	80	120	0	0					
2-Nitrophenol	1404	333	1333	0	105	80	120	0	0					
4-Chloro-3-methylphenol	1366	133	1333	0	102	80	120	0	0					
Acenaphthene	1272	66.7	1333	0	95.4	80	120	0	0					
Benzo(a)pyrene	1443	66.7	1333	0	108	80	120	0	0					
Di-n-octylphthalate	1403	66.7	1333	0	105	80	120	0	0					
Fluoranthene	1388	66.7	1333	0	104	80	120	0	0					
Hexachlorobutadiene	1256	133	1333	0	94.2	80	120	0	0					
N-Nitrosodiphenylamine	1429	66.7	1333	0	107	80	120	0	0					
Pentachlorophenol	1342	333	1333	0	101	80	120	0	0					
Phenol	1314	133	1333	0	98.6	80	120	0	0					

Sample ID	CCV-12368	SampType:	CCV	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_041201A		
Client ID:	ZZZZZ	Batch ID:	12368	TestNo:	SW8270D			Analysis Date:	12/1/2004	SeqNo:	296310		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

1,4-Dichlorobenzene	1640	66.7	1667	0	98.4	80	120	0	0					
2,4,6-Trichlorophenol	1773	333	1667	0	106	80	120	0	0					
2,4-Dichlorophenol	1769	200	1667	0	106	80	120	0	0					
2-Nitrophenol	1879	333	1667	0	113	80	120	0	0					
4-Chloro-3-methylphenol	1951	133	1667	0	117	80	120	0	0					
Acenaphthene	1796	66.7	1667	0	108	80	120	0	0					
Benzo(a)pyrene	1954	66.7	1667	0	117	80	120	0	0					
Di-n-octylphthalate	1967	66.7	1667	0	118	80	120	0	0					
Fluoranthene	1686	66.7	1667	0	101	80	120	0	0					
Hexachlorobutadiene	1610	133	1667	0	96.6	80	120	0	0					
N-Nitrosodiphenylamine	1926	66.7	1667	0	116	80	120	0	0					
Pentachlorophenol	1404	333	1667	0	84.3	80	120	0	0					
Phenol	1881	133	1667	0	113	80	120	0	0					

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

Work Order: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	CCV-12368	SampType:	CCV	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_041201A
Client ID:	ZZZZZ	Batch ID:	12368	TestNo:	SW8270D			Analysis Date:	12/2/2004	SeqNo:	296314
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	1692	66.7	1667	0	102	80	120	0	0		
2,4,6-Trichlorophenol	1599	333	1667	0	95.9	80	120	0	0		
2,4-Dichlorophenol	1800	200	1667	0	108	80	120	0	0		
2-Nitrophenol	1889	333	1667	0	113	80	120	0	0		
4-Chloro-3-methylphenol	1983	133	1667	0	119	80	120	0	0		
Acenaphthene	1825	66.7	1667	0	110	80	120	0	0		
Benzo(a)pyrene	1956	66.7	1667	0	117	80	120	0	0		
Di-n-octylphthalate	1996	66.7	1667	0	120	80	120	0	0		
Fluoranthene	1610	66.7	1667	0	96.6	80	120	0	0		
Hexachlorobutadiene	1669	133	1667	0	100	80	120	0	0		
N-Nitrosodiphenylamine	1979	66.7	1667	0	119	80	120	0	0		
Pentachlorophenol	1359	333	1667	0	81.5	80	120	0	0		
Phenol	1905	133	1667	0	114	80	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	GC-M_041108E		
Client ID:	ZZZZZ	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2004	SeqNo:	291170		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	15.0												
Lube Oil	ND	50.0												
Surr: o-Terphenyl	37.48	1.00	33.33	0	112	50	150	0	0					

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	GC-M_041110A		
Client ID:	ZZZZZ	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/10/2004	SeqNo:	291685		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	15.0												
Lube Oil	ND	50.0												
Surr: o-Terphenyl	30.58	1.00	33.33	0	91.8	50	150	0	0					

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	11/30/2004	Run ID:	GC-M_041202A			
Client ID:	ZZZZZ	Batch ID:	12362	TestNo:	NWTPH-Dx			Analysis Date:	12/2/2004	SeqNo:	296610			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	15.0												
Lube Oil	ND	50.0												
Surr: o-Terphenyl	32.83	1.00	33.33	0	98.5	50	150	0	0					

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	GC-M_041108E			
Client ID:	ZZZZZ	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2004	SeqNo:	291171			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	166.3	15.0	167.6	0	99.2	76.3	122	0	0					
Lube Oil	188	50.0	167.6	0	112	69.9	127	0	0					

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

WorkOrder: 0410156

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	GC-M_041110A			
Client ID:	ZZZZZ	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/10/2004	SeqNo:	291686			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	163.8	15.0	167.6	0	97.7	76.3	122	0	0		
Lube Oil	185.3	50.0	167.6	0	111	69.9	127	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	11/30/2004	Run ID:	GC-M_041202A		
Client ID:	ZZZZZ	Batch ID:	12362	TestNo:	NWTPH-Dx			Analysis Date:	12/2/2004	SeqNo:	296611		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	156.1	15.0	167.6	0	93.1	76.3	122	0	0		
Lube Oil	180.6	50.0	167.6	0	108	69.9	127	0	0		

Sample ID	0410156-03ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	11/5/2004	Run ID:	GC-M_041108E		
Client ID:	LW041S(1-1.5)	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2004	SeqNo:	291188		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	16.5	0	0	0	0	0	0	0	0	20
Lube Oil	ND	54.8	0	0	0	0	0	0	0	0	20

Sample ID	0410163-01ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	11/5/2004	Run ID:	GC-M_041108E		
Client ID:	ZZZZZ	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2004	SeqNo:	291189		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	145.8	17.9	0	0	0	0	0	172.7	16.9	20
Lube Oil	ND	59.6	0	0	0	0	0	0	0	20

Sample ID	0411142-01ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	11/30/2004	Run ID:	GC-M_041202A		
Client ID:	ZZZZZ	Batch ID:	12362	TestNo:	NWTPH-Dx			Analysis Date:	12/2/2004	SeqNo:	296633		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	19.8	0	0	0	0	0	0	0	20
Lube Oil	ND	66.1	0	0	0	0	0	0	0	20

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	0411142-02ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	11/30/2004	Run ID:	GC-M_041202A		
Client ID:	ZZZZZ	Batch ID:	12362	TestNo:	NWTPH-Dx			Analysis Date:	12/2/2004	SeqNo:	296634		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	ND	20.3	0	0	0	0	0	0	0	0	0	20
Lube Oil	ND	67.7	0	0	0	0	0	0	0	0	0	20

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041108E		
Client ID:	ZZZZZ	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2004	SeqNo:	291172		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	704.3	15.0	667.9	0	105	85	115	0	0			
Lube Oil	397	50.0	339.3	0	117	85	115	0	0			SC

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		RunID:	GC-M_041108E		
Client ID:	ZZZZZ	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/8/2004	SeqNo:	291190		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	676.8	15.0	667.9	0	101	85	115	0	0			
Lube Oil	395.4	50.0	339.3	0	117	85	115	0	0			SC

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041110A		
Client ID:	ZZZZZ	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/10/2004	SeqNo:	291687		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	340.1	15.0	334	0	102	85	115	0	0			
Lube Oil	368.5	50.0	333.3	0	111	85	115	0	0			

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041110A		
Client ID:	ZZZZZ	Batch ID:	12213	TestNo:	NWTPH-Dx			Analysis Date:	11/10/2004	SeqNo:	291695		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Diesel	343.6	15.0	334	0	103	85	115	0	0			
Lube Oil	352.2	50.0	333.3	0	106	85	115	0	0			

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041202A			
Client ID:	ZZZZZ	Batch ID:	12362	TestNo:	NWTPH-Dx			Analysis Date:	12/2/2004	SeqNo:	296612			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		685.4		15.0	667.9	0		103	85	115	0		0	
Lube Oil		228.5		50.0	250	0		91.4	85	115	0		0	

Sample ID	CCV	SampType: CCV	TestCode: NWTPHDX_S	Units: mg/Kg	Prep Date:				Run ID: GC-M_041202A			
Client ID: ZZZZZ		Batch ID: 12362	TestNo: NWTPH-Dx		Analysis Date: 12/2/2004				SeqNo: 296635			
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		676.2	15.0	667.9	0	101	85	115	0	0		
Lube Oil		216.5	50.0	250	0	86.6	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	GC-H_041101A
Client ID:	ZZZZZ	Batch ID:	12161	TestNo:	NWTPH-Gx			Analysis Date:	11/1/2004	SeqNo:	288635
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Gasoline	ND	2.50									
Surr:4-Bromofluorobenzene	104.5	1.00	100	0	105	50	150	0	0		

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	GC-H_041102A
Client ID:	ZZZZZ	Batch ID:	12161	TestNo:	NWTPH-Gx			Analysis Date:	11/2/2004	SeqNo:	288955
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Gasoline	ND	2.50									
Surr:4-Bromofluorobenzene	99.89	1.00	100	0	99.9	50	150	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:	11/1/2004	Run ID:	GC-H_041101A
Client ID:	ZZZZZ	Batch ID:	12161	TestNo:	NWTPH-Gx			Analysis Date:	11/1/2004	SeqNo:	288636
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Gasoline	34.43	2.50	30	0	115	53.5	121	0	0		
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Sample ID	0410156-02ADUP	SampType:	DUP	TestCode:	NWTPHGX_S	Units:	mg/Kg-dry	Prep Date:	11/1/2004	Run ID:	GC-H_041101A
Client ID:	LW041S(0-0.5)	Batch ID:	12161	TestNo:	NWTPH-Gx			Analysis Date:	11/1/2004	SeqNo:	288653
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Gasoline	ND	2.74	0	0	0	0	0	0	0	0	20
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Sample ID	0410156-03ADUP	SampType:	DUP	TestCode:	NWTPHGX_S	Units:	mg/Kg-dry	Prep Date:	11/1/2004	Run ID:	GC-H_041101A
Client ID:	LW041S(1-1.5)	Batch ID:	12161	TestNo:	NWTPH-Gx			Analysis Date:	11/1/2004	SeqNo:	288654
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD RPDLimit Qual

Gasoline	ND	2.74	0	0	0	0	0	0	0	0	20
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Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0410156
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX_S

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-H_041101A			
Client ID:	ZZZZZ	Batch ID:	12161	TestNo:	NWTPH-Gx			Analysis Date:	11/1/2004	SeqNo:	288637			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2212		2.50	2000	0		111	80	120	0		0	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-H_041101A			
Client ID:	ZZZZZ	Batch ID:	12161	TestNo:	NWTPH-Gx			Analysis Date:	11/1/2004	SeqNo:	288655			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2828		2.50	2500	0		113	80	120	0		0	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-H_041102A			
Client ID:	ZZZZZ	Batch ID:	12161	TestNo:	NWTPH-Gx			Analysis Date:	11/2/2004	SeqNo:	288956			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2369		2.50	2500	0		94.8	80	120	0		0	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-H_041102A			
Client ID:	ZZZZZ	Batch ID:	12161	TestNo:	NWTPH-Gx			Analysis Date:	11/2/2004	SeqNo:	288958			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2845		2.50	3000	0		94.8	80	120	0		0	

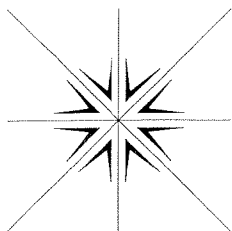
Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- CR Result for this analyte maybe biased due to interferences.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- G Result may be biased high due to biogenic interferences. Clean up is recommended.
- H Sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MFL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- S Recovery is outside control limits.
- SC Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

November 16, 2004

Mark Chandler
Time Oil Co.
2737 West Commodore Way
Seattle, WA 98199-1257

TEL: (206) 285-2400

FAX (206) 285-7833

RE: NW Terminal Additional Well Install Phase

Dear Mark Chandler:

Order No.: 0411033

Specialty Analytical received 7 samples on 11/4/2004 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

CC:
Terry McGoorty @ Landau Associates



☒ **Seattle (Edmonds)** (425) 778-0907
☐ **Tacoma** (253) 926-2493
☐ **Spokane** (509) 327-9737
☐ **Portland (Tigard)** (503) 443-6010
☐

Chain-of-Custody Record

0411032

Date 11/1/04
Page 1 of 1

[illegible]

WHITE COPY - Project File

YELLOW COPY - Laboratory

PINK COPY - Client Representative

Rev. 6/02

BZTO104(e)023729

Specialty Analytical

16-Nov-04

Lab Order: 0411033
Client: Time Oil Co.
Project: NW Terminal Additional Well Inst

DATESREPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0411033-01A	LW040A (20-21)	11/1/2004 1:30:00 PM	Soil	HOLD per Client Request			11/4/2004
0411033-02A	LW040S (21-21.5)	11/1/2004 10:30:00 AM		NWTPH-Dx		11/8/2004	11/11/2004
				NWTPH-Gx		11/4/2004	11/5/2004
				PERCENT MOISTURE			11/9/2004
0411033-02B				SEMI-VOLATILE ORGANICS		11/9/2004	11/9/2004
				Total Metals by ICP		11/5/2004	11/10/2004
				Total Metals by ICP		11/5/2004	11/11/2004
0411033-03A	LW045D (27-28)	11/1/2004 4:15:00 PM		NWTPH-Dx		11/8/2004	11/11/2004
				NWTPH-Gx		11/4/2004	11/5/2004
				PERCENT MOISTURE			11/9/2004
0411033-03B				SEMI-VOLATILE ORGANICS		11/9/2004	11/9/2004
				Total Metals by ICP		11/5/2004	11/11/2004
				Total Metals by ICP		11/5/2004	11/10/2004
0411033-04A	LW036D (7-8)	11/2/2004 10:20:00 AM		NWTPH-Dx		11/8/2004	11/11/2004
				NWTPH-Gx		11/4/2004	11/5/2004
				PERCENT MOISTURE			11/9/2004
0411033-04B				SEMI-VOLATILE ORGANICS		11/9/2004	11/9/2004
				Total Metals by ICP		11/5/2004	11/11/2004
				Total Metals by ICP		11/5/2004	11/10/2004
0411033-05A	LW037D (6-7)	11/2/2004 1:25:00 PM		NWTPH-Dx		11/8/2004	11/11/2004
				NWTPH-Gx		11/4/2004	11/5/2004
				PERCENT MOISTURE			11/9/2004
0411033-05B				SEMI-VOLATILE ORGANICS		11/9/2004	11/9/2004
				Total Metals by ICP		11/5/2004	11/10/2004
				Total Metals by ICP		11/5/2004	11/11/2004
0411033-06A	LW038D (7-8)	11/2/2004 3:00:00 PM		NWTPH-Dx		11/8/2004	11/11/2004
				NWTPH-Gx		11/4/2004	11/5/2004
				PERCENT MOISTURE			11/9/2004

Specialty Analytical

16-Nov-04

Lab Order: 0411033
Client: Time Oil Co.
Project: NW Terminal Additional Well Inst

DATESREPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0411033-06B	LW038D(7-8)	11/2/2004 3:00:00 PM	Soil	SEMI-VOLATILEORGANICS		11/10/2004	11/11/2004
				Total Metals by ICP		11/5/2004	11/10/2004
				Total Metals by ICP		11/5/2004	11/11/2004
0411033-07A	LW039D(5-6)	11/3/2004 10:00:00 AM		NWTPH-Dx		11/8/2004	11/11/2004
				NWTPH-Gx		11/4/2004	11/5/2004
				NWTPH-Gx		11/4/2004	11/5/2004
				PERCENTMOISTURE			11/9/2004
0411033-07B				SEMI-VOLATILEORGANICS		11/10/2004	11/11/2004
				Total Metals by ICP		11/5/2004	11/10/2004
				Total Metals by ICP		11/5/2004	11/11/2004

Specialty Analytical

Date: 16-Nov-04

CLIENT:	Time Oil Co.	Lab Order:	0411033
Project:	NW Terminal Additional Well Install Phase III		

Lab ID:	0411033-01	Collection Date:	11/1/2004 1:30:00 PM
Client Sample ID:	LW040A (20-21)	Matrix:	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
----------	--------	-------	------	-------	----	---------------

HOLD PER CLIENT REQUEST		PER CLIENT				Analyst: ADM
Hold	HOLD				1	11/4/2004

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co. Lab Order: 0411033
Project: NW Terminal Additional Well Install Phase III

Lab ID: 0411033-02 Collection Date: 11/1/2004 10:30:00 AM
Client Sample ID: LW040S (21-21.5) Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
						Analyst: tlf
Diesel	ND	17.4		mg/Kg-dry	1	11/11/2004
Lube Oil	ND	57.9		mg/Kg-dry	1	11/11/2004
Surr: o-Terphenyl	69.4	50-150		%REC	1	11/11/2004
NWTPH-GX						
						Analyst: tlf
Gasoline	ND	2.89		mg/Kg-dry	1	11/5/2004
Surr: 4-Bromofluorobenzene	106	50-150		%REC	1	11/5/2004
TOTAL METALS BY ICP						
						Analyst: skc
						E6010
Arsenic	ND	1.61		mg/Kg	1	11/10/2004 6:45:13 PM
Chromium	12.8	0.403		mg/Kg	1	11/11/2004 5:15:30 PM
Copper	12.3	0.806		mg/Kg	1	11/10/2004 6:45:13 PM
Lead	ND	1.61		mg/Kg	1	11/11/2004 5:15:30 PM
Nickel	14.5	0.403		mg/Kg	1	11/11/2004 5:15:30 PM
Zinc	50.0	0.806		mg/Kg	1	11/10/2004 6:45:13 PM
SEMIVOLATILE ORGANICS BY GC/MS						
						Analyst: bda
						SW8270D
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 4:52:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 4:52:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 4:52:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 4:52:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/9/2004 4:52:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/9/2004 4:52:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/9/2004 4:52:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/9/2004 4:52:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/9/2004 4:52:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/9/2004 4:52:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/9/2004 4:52:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/9/2004 4:52:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/9/2004 4:52:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/9/2004 4:52:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0411033

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/9/2004 4:52:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/9/2004 4:52:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Benzoic Acid	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/9/2004 4:52:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/9/2004 4:52:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/9/2004 4:52:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/9/2004 4:52:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/9/2004 4:52:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/9/2004 4:52:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/9/2004 4:52:00 PM
Phenanthrene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Phenol	ND	133	µg/Kg	1	11/9/2004 4:52:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/9/2004 4:52:00 PM
Surr: 2,4,6-Tribromophenol	51.9	57.8-119	S %REC	1	11/9/2004 4:52:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.

Lab Order: 0411033

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	63.0	52.6-93.2	%REC	1	11/9/2004 4:52:00 PM
Surr: 2-Fluorophenol	52.9	40.7-111	%REC	1	11/9/2004 4:52:00 PM
Surr: 4-Terphenyl-d14	62.9	49.8-118	%REC	1	11/9/2004 4:52:00 PM
Surr: Nitrobenzene-d5	55.6	44.8-103	%REC	1	11/9/2004 4:52:00 PM
Surr: Phenol-d6	64.2	47.5-117	%REC	1	11/9/2004 4:52:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0411033

Lab ID: 0411033-03
Client Sample ID: LW045D (27-28)

Collection Date: 11/1/2004 4:15:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
		NWTPH-DX				Analyst: tlf
Diesel	ND	19.0		mg/Kg-dry	1	11/11/2004
Lube Oil	ND	63.2		mg/Kg-dry	1	11/11/2004
Surr: o-Terphenyl	60.4	50-150		%REC	1	11/11/2004
NWTPH-GX						
		NWTPH-GX				Analyst: tlf
Gasoline	ND	3.16		mg/Kg-dry	1	11/5/2004
Surr: 4-Bromofluorobenzene	108	50-150		%REC	1	11/5/2004
TOTAL METALS BY ICP						
		E6010				Analyst: skc
Arsenic	ND	1.59		mg/Kg	1	11/10/2004 6:50:31 PM
Chromium	14.4	0.397		mg/Kg	1	11/11/2004 5:20:48 PM
Copper	11.7	0.794		mg/Kg	1	11/10/2004 6:50:31 PM
Lead	ND	1.59		mg/Kg	1	11/11/2004 5:20:48 PM
Nickel	16.1	0.397		mg/Kg	1	11/11/2004 5:20:48 PM
Zinc	45.8	0.794		mg/Kg	1	11/10/2004 6:50:31 PM
SEMIVOLATILE ORGANICS BY GC/MS						
		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 5:22:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 5:22:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 5:22:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 5:22:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/9/2004 5:22:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/9/2004 5:22:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/9/2004 5:22:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/9/2004 5:22:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/9/2004 5:22:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/9/2004 5:22:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/9/2004 5:22:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/9/2004 5:22:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/9/2004 5:22:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/9/2004 5:22:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.

Lab Order: 0411033

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/9/2004 5:22:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/9/2004 5:22:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/9/2004 5:22:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/9/2004 5:22:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/9/2004 5:22:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/9/2004 5:22:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/9/2004 5:22:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/9/2004 5:22:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/9/2004 5:22:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/9/2004 5:22:00 PM
Phenanthrene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Phenol	ND	133	µg/Kg	1	11/9/2004 5:22:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/9/2004 5:22:00 PM
Surr: 2,4,6-Tribromophenol	44.9	57.8-119	S %REC	1	11/9/2004 5:22:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.

Lab Order: 0411033

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	53.5	52.6-93.2	%REC	1	11/9/2004 5:22:00 PM
Surr: 2-Fluorophenol	48.1	40.7-111	%REC	1	11/9/2004 5:22:00 PM
Surr: 4-Terphenyl-d14	58.2	49.8-118	%REC	1	11/9/2004 5:22:00 PM
Surr: Nitrobenzene-d5	48.5	44.8-103	%REC	1	11/9/2004 5:22:00 PM
Surr: Phenol-d6	56.8	47.5-117	%REC	1	11/9/2004 5:22:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.

Lab Order: 0411033

Project: NW Terminal Additional Well Install Phase III

Lab ID: 0411033-04

Collection Date: 11/2/2004 10:20:00 AM

Client Sample ID: LW036D (7-8)

Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
			NWTPH-DX		Analyst: tlf	
Diesel	ND	18.8		mg/Kg-dry	1	11/11/2004
Lube Oil	ND	62.5		mg/Kg-dry	1	11/11/2004
Surr: o-Terphenyl	76.3	50-150		%REC	1	11/11/2004
NWTPH-GX						
			NWTPH-GX		Analyst: tlf	
Gasoline	ND	3.12		mg/Kg-dry	1	11/5/2004
Surr: 4-Bromofluorobenzene	106	50-150		%REC	1	11/5/2004
TOTAL METALS BY ICP						
			E6010		Analyst: skc	
Arsenic	ND	1.75		mg/Kg	1	11/10/2004 6:55:50 PM
Chromium	13.5	0.439		mg/Kg	1	11/11/2004 5:26:07 PM
Copper	11.3	0.877		mg/Kg	1	11/10/2004 6:55:50 PM
Lead	ND	1.75		mg/Kg	1	11/11/2004 5:26:07 PM
Nickel	13.4	0.439		mg/Kg	1	11/11/2004 5:26:07 PM
Zinc	46.7	0.877		mg/Kg	1	11/10/2004 6:55:50 PM
SEMIVOLATILE ORGANICS BY GC/MS						
			SW8270D		Analyst: bda	
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 5:53:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 5:53:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 5:53:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 5:53:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/9/2004 5:53:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/9/2004 5:53:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/9/2004 5:53:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/9/2004 5:53:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/9/2004 5:53:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/9/2004 5:53:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/9/2004 5:53:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/9/2004 5:53:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/9/2004 5:53:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/9/2004 5:53:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0411033

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/9/2004 5:53:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/9/2004 5:53:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/9/2004 5:53:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/9/2004 5:53:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/9/2004 5:53:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/9/2004 5:53:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/9/2004 5:53:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/9/2004 5:53:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/9/2004 5:53:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/9/2004 5:53:00 PM
Phenanthrene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Phenol	ND	133	µg/Kg	1	11/9/2004 5:53:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/9/2004 5:53:00 PM
Surr: 2,4,6-Tribromophenol	51.3	57.8-119	S %REC	1	11/9/2004 5:53:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.

Lab Order: 0411033

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	54.3	52.6-93.2	%REC	1	11/9/2004 5:53:00 PM
Surr: 2-Fluorophenol	53.2	40.7-111	%REC	1	11/9/2004 5:53:00 PM
Surr: 4-Terphenyl-d14	61.2	49.8-118	%REC	1	11/9/2004 5:53:00 PM
Surr: Nitrobenzene-d5	48.1	44.8-103	%REC	1	11/9/2004 5:53:00 PM
Surr: Phenol-d6	60.0	47.5-117	%REC	1	11/9/2004 5:53:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0411033

Lab ID: 0411033-05
Client Sample ID: LW037D(6-7)

Collection Date: 11/2/2004 1:25:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
				NWTPH-DX		
				Analyst: tlf		
Diesel	ND	19.1		mg/Kg-dry	1	11/11/2004
Lube Oil	ND	63.6		mg/Kg-dry	1	11/11/2004
Surr: o-Terphenyl	64.1	50-150		%REC	1	11/11/2004
NWTPH-GX						
				NWTPH-GX		
				Analyst: tlf		
Gasoline	ND	3.18		mg/Kg-dry	1	11/5/2004
Surr: 4-Bromofluorobenzene	105	50-150		%REC	1	11/5/2004
TOTAL METALS BY ICP						
				E6010		
				Analyst: skc		
Arsenic	ND	1.59		mg/Kg	1	11/10/2004 7:01:09 PM
Chromium	11.9	0.397		mg/Kg	1	11/11/2004 5:31:25 PM
Copper	10.4	0.794		mg/Kg	1	11/10/2004 7:01:09 PM
Lead	ND	1.59		mg/Kg	1	11/11/2004 5:31:25 PM
Nickel	12.1	0.397		mg/Kg	1	11/11/2004 5:31:25 PM
Zinc	45.2	0.794		mg/Kg	1	11/10/2004 7:01:09 PM
SEMIVOLATILE ORGANICS BY GC/MS						
				SW8270D		
				Analyst: bda		
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 6:23:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 6:23:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 6:23:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/9/2004 6:23:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/9/2004 6:23:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/9/2004 6:23:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/9/2004 6:23:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/9/2004 6:23:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/9/2004 6:23:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/9/2004 6:23:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/9/2004 6:23:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/9/2004 6:23:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/9/2004 6:23:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/9/2004 6:23:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0411033

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/9/2004 6:23:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/9/2004 6:23:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/9/2004 6:23:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/9/2004 6:23:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/9/2004 6:23:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/9/2004 6:23:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/9/2004 6:23:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/9/2004 6:23:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/9/2004 6:23:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/9/2004 6:23:00 PM
Phenanthrene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Phenol	ND	133	µg/Kg	1	11/9/2004 6:23:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/9/2004 6:23:00 PM
Surr: 2,4,6-Tribromophenol	42.9	57.8-119	S %REC	1	11/9/2004 6:23:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.

Lab Order: 0411033

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	66.6	52.6-93.2	%REC	1	11/9/2004 6:23:00 PM
Surr: 2-Fluorophenol	58.0	40.7-111	%REC	1	11/9/2004 6:23:00 PM
Surr: 4-Terphenyl-d14	61.5	49.8-118	%REC	1	11/9/2004 6:23:00 PM
Surr: Nitrobenzene-d5	59.6	44.8-103	%REC	1	11/9/2004 6:23:00 PM
Surr: Phenol-d6	64.4	47.5-117	%REC	1	11/9/2004 6:23:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0411033

Lab ID: 0411033-06
Client Sample ID: LW038D (7-8)

Collection Date: 11/2/2004 3:00:00 PM
Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
			NWTPH-DX		Analyst: tlf	
Diesel	ND	19.5		mg/Kg-dry	1	11/11/2004
Lube Oil	ND	64.9		mg/Kg-dry	1	11/11/2004
Surr: o-Terphenyl	76.1	50-150		%REC	1	11/11/2004
NWTPH-GX						
			NWTPH-GX		Analyst: tlf	
Gasoline	ND	3.24		mg/Kg-dry	1	11/5/2004
Surr: 4-Bromofluorobenzene	105	50-150		%REC	1	11/5/2004
TOTAL METALS BY ICP						
			E6010		Analyst: skc	
Arsenic	ND	1.69		mg/Kg	1	11/11/2004 5:36:43 PM
Chromium	14.7	0.424		mg/Kg	1	11/11/2004 5:36:43 PM
Copper	10.2	0.847		mg/Kg	1	11/10/2004 7:22:46 PM
Lead	ND	1.69		mg/Kg	1	11/11/2004 5:36:43 PM
Nickel	13.4	0.424		mg/Kg	1	11/11/2004 5:36:43 PM
Zinc	40.1	0.847		mg/Kg	1	11/11/2004 5:36:43 PM
SEMIVOLATILE ORGANICS BY GC/MS						
			SW8270D		Analyst: bda	
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/11/2004 1:47:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/11/2004 1:47:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/11/2004 1:47:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/11/2004 1:47:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/11/2004 1:47:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/11/2004 1:47:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/11/2004 1:47:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/11/2004 1:47:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/11/2004 1:47:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/11/2004 1:47:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/11/2004 1:47:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/11/2004 1:47:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/11/2004 1:47:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/11/2004 1:47:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0411033

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/11/2004 1:47:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/11/2004 1:47:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Acenaphthylene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Anthracene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Benz(a)anthracene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Benzo(a)pyrene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Benzo(b)fluoranthene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Benzo(g,h,i)perylene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Benzo(k)fluoranthene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/11/2004 1:47:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/11/2004 1:47:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/11/2004 1:47:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Chrysene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Fluoranthene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/11/2004 1:47:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/11/2004 1:47:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/11/2004 1:47:00 PM
Indeno(1,2,3-cd)pyrene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/11/2004 1:47:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/11/2004 1:47:00 PM
Phenanthrene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Phenol	ND	133	µg/Kg	1	11/11/2004 1:47:00 PM
Pyrene	ND	66.7	µg/Kg	1	11/11/2004 1:47:00 PM
Surr: 2,4,6-Tribromophenol	51.7	57.8-119	S %REC	1	11/11/2004 1:47:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.

Lab Order: 0411033

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	59.0	52.6-93.2	%REC	1	11/11/2004 1:47:00 PM
Surr: 2-Fluorophenol	53.3	40.7-111	%REC	1	11/11/2004 1:47:00 PM
Surr: 4-Terphenyl-d14	65.5	49.8-118	%REC	1	11/11/2004 1:47:00 PM
Surr: Nitrobenzene-d5	53.6	44.8-103	%REC	1	11/11/2004 1:47:00 PM
Surr: Phenol-d6	57.5	47.5-117	%REC	1	11/11/2004 1:47:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0411033

Lab ID: 0411033-07 Collection Date: 11/3/2004 10:00:00 AM
Client Sample ID: LW039D (5-6) Matrix: SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
NWTPH-DX						
		NWTPH-DX				Analyst: tlf
Diesel	ND	20.2	A3	mg/Kg-dry	1	11/11/2004
Lube Oil	155	67.3		mg/Kg-dry	1	11/11/2004
Surr: o-Terphenyl	92.6	50-150		%REC	1	11/11/2004
NWTPH-GX						
		NWTPH-GX				Analyst: tlf
Gasoline	ND	3.36		mg/Kg-dry	1	11/5/2004
Surr: 4-Bromofluorobenzene	106	50-150		%REC	1	11/5/2004
TOTAL METALS BY ICP						
		E6010				Analyst: skc
Arsenic	ND	1.52		mg/Kg	1	11/11/2004 5:42:03 PM
Chromium	11.8	0.379		mg/Kg	1	11/11/2004 5:42:03 PM
Copper	9.97	0.758		mg/Kg	1	11/10/2004 7:28:04 PM
Lead	ND	1.52		mg/Kg	1	11/11/2004 5:42:03 PM
Nickel	14.4	0.379		mg/Kg	1	11/11/2004 5:42:03 PM
Zinc	41.2	0.758		mg/Kg	1	11/11/2004 5:42:03 PM
SEMIVOLATILE ORGANICS BY GC/MS						
		SW8270D				Analyst: bda
1,2,4-Trichlorobenzene	ND	66.7		µg/Kg	1	11/11/2004 2:17:00 PM
1,2-Dichlorobenzene	ND	66.7		µg/Kg	1	11/11/2004 2:17:00 PM
1,3-Dichlorobenzene	ND	66.7		µg/Kg	1	11/11/2004 2:17:00 PM
1,4-Dichlorobenzene	ND	66.7		µg/Kg	1	11/11/2004 2:17:00 PM
2,4,5-Trichlorophenol	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
2,4,6-Trichlorophenol	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
2,4-Dichlorophenol	ND	200		µg/Kg	1	11/11/2004 2:17:00 PM
2,4-Dimethylphenol	ND	200		µg/Kg	1	11/11/2004 2:17:00 PM
2,4-Dinitrophenol	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
2,4-Dinitrotoluene	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
2,6-Dinitrotoluene	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
2-Chloronaphthalene	ND	66.7		µg/Kg	1	11/11/2004 2:17:00 PM
2-Chlorophenol	ND	66.7		µg/Kg	1	11/11/2004 2:17:00 PM
2-Methylnaphthalene	ND	66.7		µg/Kg	1	11/11/2004 2:17:00 PM
2-Methylphenol	ND	133		µg/Kg	1	11/11/2004 2:17:00 PM
2-Nitroaniline	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
2-Nitrophenol	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
3,3-Dichlorobenzidine	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
3-&4-Methylphenol	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
3-Nitroaniline	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
4,6-Dinitro-2-methylphenol	ND	333		µg/Kg	1	11/11/2004 2:17:00 PM
4-Bromophenyl phenyl ether	ND	66.7		µg/Kg	1	11/11/2004 2:17:00 PM
4-Chloro-3-methylphenol	ND	133		µg/Kg	1	11/11/2004 2:17:00 PM
4-Chloroaniline	ND	200		µg/Kg	1	11/11/2004 2:17:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Project: NW Terminal Additional Well Install Phase III

Lab Order: 0411033

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

4-Chlorophenyl phenyl ether	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
4-Nitroaniline	ND	333	µg/Kg	1	11/11/2004 2:17:00 PM
4-Nitrophenol	ND	333	µg/Kg	1	11/11/2004 2:17:00 PM
Acenaphthene	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Acenaphthylene	112	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Anthracene	355	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Benz(a)anthracene	668	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Benzo(a)pyrene	585	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Benzo(b)fluoranthene	517	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Benzo(g,h,i)perylene	157	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Benzo(k)fluoranthene	187	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Benzoic Acid	ND	667	µg/Kg	1	11/11/2004 2:17:00 PM
Benzyl Alcohol	ND	333	µg/Kg	1	11/11/2004 2:17:00 PM
Bis(2-chloroethoxy)methane	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Bis(2-chloroethyl)ether	ND	133	µg/Kg	1	11/11/2004 2:17:00 PM
Bis(2-chloroisopropyl)ether	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Bis(2-ethylhexyl)phthalate	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Butyl benzyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Carbazole	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Chrysene	655	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Di-n-butyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Di-n-octyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Dibenz(a,h)anthracene	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Dibenzofuran	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Diethyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Dimethyl phthalate	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Fluoranthene	775	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Fluorene	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Hexachlorobenzene	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Hexachlorobutadiene	ND	133	µg/Kg	1	11/11/2004 2:17:00 PM
Hexachlorocyclopentadiene	ND	333	µg/Kg	1	11/11/2004 2:17:00 PM
Hexachloroethane	ND	133	µg/Kg	1	11/11/2004 2:17:00 PM
Indeno(1,2,3-cd)pyrene	160	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Isophorone	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
N-Nitrosodi-n-propylamine	ND	133	µg/Kg	1	11/11/2004 2:17:00 PM
N-Nitrosodimethylamine	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
N-Nitrosodiphenylamine	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Naphthalene	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Nitrobenzene	ND	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Pentachlorophenol	ND	333	µg/Kg	1	11/11/2004 2:17:00 PM
Phenanthrene	674	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Phenol	ND	133	µg/Kg	1	11/11/2004 2:17:00 PM
Pyrene	1090	66.7	µg/Kg	1	11/11/2004 2:17:00 PM
Surr: 2,4,6-Tribromophenol	43.4	57.8-119	S %REC	1	11/11/2004 2:17:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.

Lab Order: 0411033

Project: NW Terminal Additional Well Install Phase III

SEMIVOLATILE ORGANICS BY GC/MS

SW8270D

Analyst: bda

Surr: 2-Fluorobiphenyl	73.1	52.6-93.2	%REC	1	11/11/2004 2:17:00 PM
Surr: 2-Fluorophenol	56.5	40.7-111	%REC	1	11/11/2004 2:17:00 PM
Surr: 4-Terphenyl-d14	73.3	49.8-118	%REC	1	11/11/2004 2:17:00 PM
Surr: Nitrobenzene-d5	57.5	44.8-103	%REC	1	11/11/2004 2:17:00 PM
Surr: Phenol-d6	68.3	47.5-117	%REC	1	11/11/2004 2:17:00 PM

Specialty Analytical

Date: 16-Nov-04

CLIENT: Time Oil Co.
Work Order: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041110B
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			AnalysisDate:	11/10/2004	SeqNo:	291619
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	ND	2.00									
Chromium	ND	0.500									
Copper	ND	1.00									
Lead	ND	2.00									
Nickel	ND	0.500									
Zinc	0.64	1.00									J

Sample ID	LCS	SampType:	LCS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041110B
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			AnalysisDate:	11/10/2004	SeqNo:	291620
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	104.6	2.00	100	0	105	85.1	107	0	0		
Chromium	25.08	0.500	25	0	100	84	113	0	0		
Copper	51.03	1.00	50	0	102	91.3	111	0	0		
Lead	99.29	2.00	100	0	99.3	84.9	109	0	0		
Nickel	26.1	0.500	25	0	104	85.5	112	0	0		
Zinc	53.08	1.00	50	0.64	105	86.8	112	0	0		

Sample ID	0411026-01BMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041110B
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			AnalysisDate:	11/10/2004	SeqNo:	291623
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	84.5	1.67	83.33	0	101	86.1	109	0	0		
Copper	60.34	0.833	41.67	24.67	85.6	75.1	126	0	0		
Zinc	92.67	0.833	41.67	46.61	111	86.2	113	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	0411026-01BMS	SampType:	MS	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041111A	
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			Analysis Date:	11/11/2004	SeqNo:	292056	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		30.72	0.417	20.83	16.69	67.3	75	121	0	0		S,RP
Lead		78.6	1.67	83.33	0	94.3	92.1	104	0	0		
Nickel		30.85	0.417	20.83	19	56.9	89.3	105	0	0		S,RP

Sample ID	0411026-01BMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041110B	
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			Analysis Date:	11/10/2004	SeqNo:	291625	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		83.23	1.61	80.65	0	103	86.1	109	84.5	1.52	20	
Copper		62.01	0.806	40.32	24.67	92.6	75.1	126	60.34	2.72	20	
Zinc		94.35	0.806	40.32	46.61	118	86.2	113	92.67	1.81	20	S

Sample ID	0411026-01BMSD	SampType:	MSD	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041111A	
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			Analysis Date:	11/11/2004	SeqNo:	292057	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chromium		34.44	0.403	20.16	16.69	88	75	121	30.72	11.4	20	
Lead		79.73	1.61	80.65	0	98.9	92.1	104	78.6	1.43	20	
Nickel		37.08	0.403	20.16	19	89.7	89.3	105	30.85	18.3	20	

Sample ID	0411026-01BDUP	SampType:	DUP	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041110B	
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			Analysis Date:	11/10/2004	SeqNo:	291622	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic		ND	1.47	0	0	0	0	0	0	0	20	
Chromium		11.58	0.368	0	0	0	0	0	17.02	38.1	20	R
Copper		23.18	0.735	0	0	0	0	0	24.67	6.21	20	
Lead		ND	1.47	0	0	0	0	0	0	0	20	
Nickel		16.65	0.368	0	0	0	0	0	19.77	17.1	20	
Zinc		44.04	0.735	0	0	0	0	0	46.61	5.68	20	

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/5/2004	Run ID: TJAIRIS_041110B					
Client ID: ZZZZZ	Batch ID: 12212	TestNo: E6010	AnalysisDate: 11/10/2004			SeqNo: 291624					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	104.1	2.00	100	0	104	90	110	0	0		
Chromium	25.58	0.500	25	0	102	90	110	0	0		
Copper	48.82	1.00	50	0	97.6	90	110	0	0		
Lead	100.7	2.00	100	0	101	90	110	0	0		
Nickel	26.65	0.500	25	0	107	90	110	0	0		
Zinc	51.69	1.00	50	0	103	90	110	0	0		

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/5/2004	Run ID: TJAIRIS_041110B					
Client ID: ZZZZZ	Batch ID: 12212	TestNo: E6010	AnalysisDate: 11/10/2004	SeqNo: 291635							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	109.9	2.00	100	0	110	90	110	0	0		
Calcium	2367	5.00	2500	0	94.7	90	110	0	0		B
Copper	48.8	1.00	50	0	97.6	90	110	0	0		
Magnesium	488.2	1.00	500	0	97.6	90	110	0	0		B
Zinc	54.13	1.00	50	0	108	90	110	0	0		

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/5/2004	Run ID: TJAIRIS_041110B					
Client ID: ZZZZZ	Batch ID: 12212	TestNo: E6010	Analysis Date: 11/10/2004	SeqNo: 291645							
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Copper	50.08	1.00	50	0	100	90	110	0	0		
Magnesium	501.8	1.00	500	0	100	90	110	0	0		B

Sample ID	CCV	SampType: CCV	TestCode: 6010_S	Units: mg/Kg	Prep Date: 11/5/2004	Run ID: TJAIRIS_041111A					
Client ID: ZZZZZ	Batch ID: 12212	TestNo: E6010	Analysis Date: 11/11/2004			SeqNo: 292063					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Arsenic	99.03	2.00	100	0	99	90	110	0	0		
Calcium	2489	5.00	2500	0	99.6	90	110	0	0		B
Chromium	26.29	0.500	25	0	105	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041111A		
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			AnalysisDate:	11/11/2004	SeqNo:	292063		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Iron	4920	2.00	5000	0	98.4	90	110	0	0					B
Lead	96.04	2.00	100	0	96	90	110	0	0					
Nickel	24.69	0.500	25	0	98.8	90	110	0	0					
Sodium	2393	10.0	2500	0	95.7	90	110	0	0					B
Zinc	50.31	1.00	50	0	101	90	110	0	0					

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041111A		
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			Analysis Date:	11/11/2004	SeqNo:	292074		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	101	2.00	100	0	101	90	110	0	0					
Calcium	2605	5.00	2500	0	104	90	110	0	0					B
Chromium	25.12	0.500	25	0	100	90	110	0	0					
Iron	5164	2.00	5000	0	103	90	110	0	0					B
Lead	100.5	2.00	100	0	101	90	110	0	0					
Nickel	25.58	0.500	25	0	102	90	110	0	0					
Sodium	2348	10.0	2500	0	93.9	90	110	0	0					B
Zinc	51.05	1.00	50	0	102	90	110	0	0					

Sample ID	CCV	SampType:	CCV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041111A		
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			Analysis Date:	11/11/2004	SeqNo:	292078		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	107.4	2.00	100	0	107	90	110	0	0					
Calcium	2455	5.00	2500	0	98.2	90	110	0	0					B
Chromium	26.24	0.500	25	0	105	90	110	0	0					
Iron	5138	2.00	5000	0	103	90	110	0	0					B
Lead	104.4	2.00	100	0	104	90	110	0	0					
Nickel	27.14	0.500	25	0	109	90	110	0	0					
Sodium	2329	10.0	2500	0	93.2	90	110	0	0					B
Zinc	53.21	1.00	50	0	106	90	110	0	0					

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 6010_S

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041110B	
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			AnalysisDate:	11/10/2004	SeqNo:	291618	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	101.4	2.00	100	0	101	90	110	0	0		
Chromium	24.45	0.500	25	0	97.8	90	110	0	0		
Copper	50.69	1.00	50	0	101	90	110	0	0		
Lead	99.29	2.00	100	0	99.3	90	110	0	0		
Nickel	25.46	0.500	25	0	102	90	110	0	0		
Zinc	51.17	1.00	50	0	102	90	110	0	0		

Sample ID	ICV	SampType:	ICV	TestCode:	6010_S	Units:	mg/Kg	Prep Date:	11/5/2004	Run ID:	TJAIRIS_041111A	
Client ID:	ZZZZZ	Batch ID:	12212	TestNo:	E6010			AnalysisDate:	11/11/2004	SeqNo:	292048	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Arsenic	99.48	2.00	100	0	99.5	90	110	0	0		
Chromium	24.27	0.500	25	0	97.1	90	110	0	0		
Lead	94.84	2.00	100	0	94.8	90	110	0	0		
Nickel	24.68	0.500	25	0	98.7	90	110	0	0		
Zinc	50.19	1.00	50	0	100	90	110	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.

WorkOrder: 0411033

Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12233	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/9/2004	Run ID:	5973G_041109B	
Client ID:	ZZZZZ	Batch ID:	12233	TestNo:	SW8270D			Analysis Date:	11/9/2004	SeqNo:	291406	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene		ND	66.7									
1,2-Dichlorobenzene		ND	66.7									
1,3-Dichlorobenzene		ND	66.7									
1,4-Dichlorobenzene		ND	66.7									
2,4,5-Trichlorophenol		ND	333									
2,4,6-Trichlorophenol		ND	333									
2,4-Dichlorophenol		ND	200									
2,4-Dimethylphenol		ND	200									
2,4-Dinitrophenol		ND	333									
2,4-Dinitrotoluene		ND	333									
2,6-Dinitrotoluene		ND	333									
2-Chloronaphthalene		ND	66.7									
2-Chlorophenol		ND	66.7									
2-Methylnaphthalene		ND	66.7									
2-Methylphenol		ND	133									
2-Nitroaniline		ND	333									
2-Nitrophenol		ND	333									
3,3-Dichlorobenzidine		ND	333									
3-&4-Methylphenol		ND	333									
3-Nitroaniline		ND	333									
4,6-Dinitro-2-methylphenol		ND	333									
4-Bromophenyl phenyl ether		ND	66.7									
4-Chloro-3-methylphenol		ND	133									
4-Chloroaniline		ND	200									
4-Chlorophenyl phenyl ether		ND	66.7									
4-Nitroaniline		ND	333									
4-Nitrophenol		ND	333									
Acenaphthene		ND	66.7									
Acenaphthylene		ND	66.7									
Anthracene		ND	66.7									
Benz(a)anthracene		ND	66.7									

Qualifiers: ND - Not Detected at the Reporting Limit

J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits

R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12233	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/9/2004	Run ID:	5973G_041109B
Client ID:	ZZZZZ	Batch ID:	12233	TestNo:	SW8270D			Analysis Date:	11/9/2004	SeqNo:	291406
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Benzo(a)pyrene	ND	66.7									
Benzo(b)fluoranthene	ND	66.7									
Benzo(g,h,i)perylene	ND	66.7									
Benzo(k)fluoranthene	ND	66.7									
Benzoic Acid	ND	66.7									
Benzyl Alcohol	ND	333									
Bis(2-chloroethoxy)methane	ND	66.7									
Bis(2-chloroethyl)ether	ND	133									
Bis(2-chloroisopropyl)ether	ND	66.7									
Bis(2-ethylhexyl)phthalate	ND	66.7									
Butyl benzyl phthalate	ND	66.7									
Carbazole	ND	66.7									
Chrysene	ND	66.7									
Di-n-butylphthalate	26.33	66.7									J
Di-n-octylphthalate	ND	66.7									
Dibenz(a,h)anthracene	ND	66.7									
Dibenzofuran	ND	66.7									
Diethylphthalate	ND	66.7									
Dimethylphthalate	ND	66.7									
Fluoranthene	ND	66.7									
Fluorene	20	66.7									J
Hexachlorobenzene	ND	66.7									
Hexachlorobutadiene	ND	133									
Hexachlorocyclopentadiene	ND	333									
Hexachloroethane	ND	133									
Indeno(1,2,3-cd)pyrene	ND	66.7									
Isophorone	ND	66.7									
N-Nitrosodi-n-propylamine	ND	133									
N-Nitrosodimethylamine	ND	66.7									
N-Nitrosodiphenylamine	ND	66.7									
Naphthalene	ND	66.7									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12233	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/9/2004	Run ID:	5973G_041109B
Client ID:	ZZZZZ	Batch ID:	12233	TestNo:	SW8270D			Analysis Date:	11/9/2004	SeqNo:	291406
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrobenzene	8.667	66.7									J
Pentachlorophenol	ND	333									
Phenanthrene	ND	66.7									
Phenol	ND	133									
Pyrene	ND	66.7									
Surr:2,4,6-Tribromophenol	2503	1.00	3333	0	75.1	57.8	119	0	0		
Surr:2-Fluorobiphenyl	3337	1.00	3333	0	100	52.6	93.2	0	0		S
Surr:2-Fluorophenol	3029	1.00	3333	0	90.9	40.7	111	0	0		
Surr:4-Terphenyl-d14	2854	1.00	3333	0	85.6	49.8	118	0	0		
Surr:Nitrobenzene-d5	2878	1.00	3333	0	86.3	44.8	103	0	0		
Surr:Phenol-d6	2980	1.00	3333	0	89.4	47.5	117	0	0		

Sample ID	MB-12241	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/10/2004	Run ID:	5973G_041111A
Client ID:	ZZZZZ	Batch ID:	12241	TestNo:	SW8270D			Analysis Date:	11/11/2004	SeqNo:	292026
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	ND	66.7									
1,2-Dichlorobenzene	ND	66.7									
1,3-Dichlorobenzene	ND	66.7									
1,4-Dichlorobenzene	ND	66.7									
2,4,5-Trichlorophenol	ND	333									
2,4,6-Trichlorophenol	ND	333									
2,4-Dichlorophenol	ND	200									
2,4-Dimethylphenol	ND	200									
2,4-Dinitrophenol	ND	333									
2,4-Dinitrotoluene	ND	333									
2,6-Dinitrotoluene	ND	333									
2-Chloronaphthalene	ND	66.7									
2-Chlorophenol	ND	66.7									
2-Methylnaphthalene	ND	66.7									
2-Methylphenol	ND	133									

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12241	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/10/2004	Run ID:	5973G_041111A
Client ID:	ZZZZZ	Batch ID:	12241	TestNo:	SW8270D			Analysis Date:	11/11/2004	SeqNo:	292026
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
2-Nitroaniline	ND	333									
2-Nitrophenol	ND	333									
3,3-Dichlorobenzidine	ND	333									
3-&4-Methylphenol	ND	333									
3-Nitroaniline	ND	333									
4,6-Dinitro-2-methylphenol	ND	333									
4-Bromophenyl phenyl ether	ND	66.7									
4-Chloro-3-methylphenol	ND	133									
4-Chloroaniline	ND	200									
4-Chlorophenyl phenyl ether	ND	66.7									
4-Nitroaniline	ND	333									
4-Nitrophenol	ND	333									
Acenaphthene	ND	66.7									
Acenaphthylene	ND	66.7									
Anthracene	ND	66.7									
Benzo(a)anthracene	ND	66.7									
Benzo(a)pyrene	ND	66.7									
Benzo(b)fluoranthene	ND	66.7									
Benzo(g,h,i)perylene	ND	66.7									
Benzo(k)fluoranthene	ND	66.7									
Benzoic Acid	ND	66.7									
Benzyl Alcohol	ND	333									
Bis(2-chloroethoxy)methane	ND	66.7									
Bis(2-chloroethyl)ether	ND	133									
Bis(2-chloroisopropyl)ether	ND	66.7									
Bis(2-ethylhexyl)phthalate	ND	66.7									
Butyl benzyl phthalate	ND	66.7									
Carbazole	ND	66.7									
Chrysene	ND	66.7									
Di-n-butyl phthalate	ND	66.7									
Di-n-octyl phthalate	ND	66.7									

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	MB-12241	SampType:	MBLK	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/10/2004	Run ID:	5973G_041111A
Client ID:	ZZZZZ	Batch ID:	12241	TestNo:	SW8270D			AnalysisDate:	11/11/2004	SeqNo:	292026
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Dibenz(a,h)anthracene	ND	66.7									
Dibenzofuran	ND	66.7									
Diethylphthalate	ND	66.7									
Dimethylphthalate	ND	66.7									
Fluoranthene	ND	66.7									
Fluorene	18.67	66.7									J
Hexachlorobenzene	ND	66.7									
Hexachlorobutadiene	ND	133									
Hexachlorocyclopentadiene	ND	333									
Hexachloroethane	ND	133									
Indeno(1,2,3-cd)pyrene	ND	66.7									
Isophorone	ND	66.7									
N-Nitrosodi-n-propylamine	ND	133									
N-Nitrosodimethylamine	ND	66.7									
N-Nitrosodiphenylamine	ND	66.7									
Naphthalene	ND	66.7									
Nitrobenzene	9.333	66.7									J
Pentachlorophenol	ND	333									
Phenanthrene	ND	66.7									
Phenol	ND	133									
Pyrene	ND	66.7									
Surr:2,4,6-Tribromophenol	2339	1.00	3333	0	70.2	57.8	119	0	0		
Surr: 2-Fluorobiphenyl	3034	1.00	3333	0	91	52.6	93.2	0	0		
Surr: 2-Fluorophenol	2802	1.00	3333	0	84.1	40.7	111	0	0		
Surr: 4-Terphenyl-d14	2796	1.00	3333	0	83.9	49.8	118	0	0		
Surr: Nitrobenzene-d5	2777	1.00	3333	0	83.3	44.8	103	0	0		
Surr: Phenol-d6	2868	1.00	3333	0	86	47.5	117	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	LCS-12233	SampType:	LCS	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/9/2004	Run ID:	5973G_041109B
Client ID:	ZZZZZ	Batch ID:	12233	TestNo:	SW8270D			Analysis Date:	11/9/2004	SeqNo:	291407
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	1261	66.7	1667	0	75.7	30.9	106	0	0		
1,4-Dichlorobenzene	1231	66.7	1667	0	73.9	31.4	98.2	0	0		
2,4-Dinitrotoluene	1417	333	1667	0	85	59.7	111	0	0		
2-Chlorophenol	1458	66.7	1667	0	87.5	46.2	105	0	0		
4-Chloro-3-methylphenol	1598	133	1667	0	95.9	47.4	114	0	0		
4-Nitrophenol	1510	333	1667	0	90.6	45.3	114	0	0		
Acenaphthene	1333	66.7	1667	0	80	48.2	105	0	0		
N-Nitrosodi-n-propylamine	1450	133	1667	0	87	42.4	101	0	0		
Pentachlorophenol	1103	333	1667	0	66.2	46.8	120	0	0		
Phenol	1499	133	1667	0	89.9	51.1	103	0	0		
Pyrene	1534	66.7	1667	0	92	56.7	130	0	0		

Sample ID	LCS-12241	SampType:	LCS	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/10/2004	Run ID:	5973G_041111A
Client ID:	ZZZZZ	Batch ID:	12241	TestNo:	SW8270D			Analysis Date:	11/11/2004	SeqNo:	292028
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	1171	66.7	1667	0	70.2	30.9	106	0	0		
1,4-Dichlorobenzene	1199	66.7	1667	0	71.9	31.4	98.2	0	0		
2,4-Dinitrotoluene	1382	333	1667	0	82.9	59.7	111	0	0		
2-Chlorophenol	1362	66.7	1667	0	81.7	46.2	105	0	0		
4-Chloro-3-methylphenol	1558	133	1667	0	93.5	47.4	114	0	0		
4-Nitrophenol	1362	333	1667	0	81.7	45.3	114	0	0		
Acenaphthene	1266	66.7	1667	0	76	48.2	105	0	0		
N-Nitrosodi-n-propylamine	1443	133	1667	0	86.6	42.4	101	0	0		
Pentachlorophenol	931.3	333	1667	0	55.9	46.8	120	0	0		
Phenol	1437	133	1667	0	86.2	51.1	103	0	0		
Pyrene	1446	66.7	1667	0	86.7	56.7	130	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	0411033-05BMS	SampType:	MS	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/9/2004	Run ID:	5973G_041109B
Client ID:	LW037D(6-7)	Batch ID:	12233	TestNo:	SW8270D			AnalysisDate:	11/9/2004	SeqNo:	291408
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	629.7	66.7	1667	0	37.8	31.1	92.7	0	0		
1,4-Dichlorobenzene	554.7	66.7	1667	0	33.3	16.5	85.6	0	0		
2,4-Dinitrotoluene	1098	333	1667	0	65.9	43.4	118	0	0		
2-Chlorophenol	933.7	66.7	1667	0	56	36.8	103	0	0		
4-Chloro-3-methylphenol	1177	133	1667	0	70.6	49.5	119	0	0		
4-Nitrophenol	1209	333	1667	0	72.5	45	111	0	0		
Acenaphthene	962	66.7	1667	0	57.7	45.1	102	0	0		
N-Nitrosodi-n-propylamine	939.7	133	1667	0	56.4	45.6	94.1	0	0		
Pentachlorophenol	760.3	333	1667	0	45.6	36.6	112	0	0		
Phenol	1086	133	1667	0	65.2	37.7	107	0	0		
Pyrene	1128	66.7	1667	0	67.7	42.4	131	0	0		

Sample ID	0411033-06BMS	SampType:	MS	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/10/2004	Run ID:	5973G_041111A
Client ID:	LW038D (7-8)	Batch ID:	12241	TestNo:	SW8270D			AnalysisDate:	11/11/2004	SeqNo:	292030
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	894.7	66.7	1667	0	53.7	31.1	92.7	0	0		
1,4-Dichlorobenzene	738.7	66.7	1667	0	44.3	16.5	85.6	0	0		
2,4-Dinitrotoluene	1390	333	1667	0	83.4	43.4	118	0	0		
2-Chlorophenol	1122	66.7	1667	0	67.3	36.8	103	0	0		
4-Chloro-3-methylphenol	1593	133	1667	0	95.6	49.5	119	0	0		
4-Nitrophenol	1420	333	1667	0	85.2	45	111	0	0		
Acenaphthene	1231	66.7	1667	0	73.8	45.1	102	0	0		
N-Nitrosodi-n-propylamine	1252	133	1667	0	75.1	45.6	94.1	0	0		
Pentachlorophenol	950.7	333	1667	0	57	36.6	112	0	0		
Phenol	1315	133	1667	0	78.9	37.7	107	0	0		
Pyrene	1554	66.7	1667	41.33	90.8	42.4	131	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	0411033-05BMSD	SampType:	MSD	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/9/2004	Run ID:	5973G_041109B
Client ID:	LW037D(6-7)	Batch ID:	12233	TestNo:	SW8270D			AnalysisDate:	11/9/2004	SeqNo:	291409
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	780.3	66.7	1667	0	46.8	31.1	92.7	629.7	21.4	20	R
1,4-Dichlorobenzene	672.3	66.7	1667	0	40.3	16.5	85.6	554.7	19.2	20	
2,4-Dinitrotoluene	1129	333	1667	0	67.7	43.4	118	1098	2.81	20	
2-Chlorophenol	1068	66.7	1667	0	64.1	36.8	103	933.7	13.4	20	
4-Chloro-3-methylphenol	1293	133	1667	0	77.6	49.5	119	1177	9.37	20	
4-Nitrophenol	1037	333	1667	0	62.2	45	111	1209	15.3	20	
Acenaphthene	1035	66.7	1667	0	62.1	45.1	102	962	7.28	20	
N-Nitrosodi-n-propylamine	1109	133	1667	0	66.5	45.6	94.1	939.7	16.5	20	
Pentachlorophenol	651.3	333	1667	0	39.1	36.6	112	760.3	15.4	20	
Phenol	1208	133	1667	0	72.5	37.7	107	1086	10.6	20	
Pyrene	1180	66.7	1667	0	70.8	42.4	131	1128	4.53	20	

Sample ID	0411033-06BMSD	SampType:	MSD	TestCode:	8270LL_S	Units:	µg/Kg	Prep Date:	11/10/2004	Run ID:	5973G_041111A
Client ID:	LW038D(7-8)	Batch ID:	12241	TestNo:	SW8270D			AnalysisDate:	11/11/2004	SeqNo:	292032
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,2,4-Trichlorobenzene	653	66.7	1667	0	39.2	31.1	92.7	894.7	31.2	20	R
1,4-Dichlorobenzene	530	66.7	1667	0	31.8	16.5	85.6	738.7	32.9	20	R
2,4-Dinitrotoluene	1080	333	1667	0	64.8	43.4	118	1390	25.1	20	R
2-Chlorophenol	827	66.7	1667	0	49.6	36.8	103	1122	30.2	20	R
4-Chloro-3-methylphenol	1223	133	1667	0	73.4	49.5	119	1593	26.2	20	R
4-Nitrophenol	1040	333	1667	0	62.4	45	111	1420	30.8	20	R
Acenaphthene	955	66.7	1667	0	57.3	45.1	102	1231	25.2	20	R
N-Nitrosodi-n-propylamine	901.7	133	1667	0	54.1	45.6	94.1	1252	32.5	20	R
Pentachlorophenol	722	333	1667	0	43.3	36.6	112	950.7	27.3	20	R
Phenol	971	133	1667	0	58.3	37.7	107	1315	30.1	20	R
Pyrene	1148	66.7	1667	41.33	66.4	42.4	131	1554	30.1	20	R

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: 8270LL_S

Sample ID	CCV-12233	SampType: CCV	TestCode: 8270LL_S	Units: µg/Kg	Prep Date:	Run ID: 5973G_041109B					
Client ID:	ZZZZZ	Batch ID: 12233	TestNo: SW8270D		Analysis Date: 11/9/2004	SeqNo: 291405					
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	1625	66.7	1667	0	97.5	80	120	0	0		
2,4,6-Trichlorophenol	1628	333	1667	0	97.7	80	120	0	0		
2,4-Dichlorophenol	1668	200	1667	0	100	80	120	0	0		
2-Nitrophenol	1810	333	1667	0	109	80	120	0	0		
4-Chloro-3-methylphenol	1853	133	1667	0	111	80	120	0	0		
Acenaphthene	1586	66.7	1667	0	95.2	80	120	0	0		
Benzo(a)pyrene	1846	66.7	1667	0	111	80	120	0	0		
Di-n-octylphthalate	1913	66.7	1667	0	115	80	120	0	0		
Fluoranthene	1640	66.7	1667	0	98.4	80	120	0	0		
Hexachlorobutadiene	1478	133	1667	0	88.7	80	120	0	0		
N-Nitrosodiphenylamine	1830	66.7	1667	0	110	80	120	0	0		
Pentachlorophenol	1520	333	1667	0	91.2	80	120	0	0		
Phenol	1786	133	1667	0	107	80	120	0	0		

Sample ID	CCV-12241	SampType: CCV	TestCode: 8270LL_S	Units: µg/Kg	Prep Date:				Run ID: 5973G_041111A		
Client ID: ZZZZZ	Batch ID: 12241	TestNo: SW8270D			Analysis Date: 11/11/2004				SeqNo: 292023		
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
1,4-Dichlorobenzene	1586	66.7	1667	0	95.2	80	120	0	0		
2,4,6-Trichlorophenol	1478	333	1667	0	88.7	80	120	0	0		
2,4-Dichlorophenol	1679	200	1667	0	101	80	120	0	0		
2-Nitrophenol	1786	333	1667	0	107	80	120	0	0		
4-Chloro-3-methylphenol	1858	133	1667	0	111	80	120	0	0		
Acenaphthene	1531	66.7	1667	0	91.9	80	120	0	0		
Benzo(a)pyrene	1881	66.7	1667	0	113	80	120	0	0		
Di-n-octylphthalate	1839	66.7	1667	0	110	80	120	0	0		
Fluoranthene	1627	66.7	1667	0	97.6	80	120	0	0		
Hexachlorobutadiene	1478	133	1667	0	88.7	80	120	0	0		
N-Nitrosodiphenylamine	1791	66.7	1667	0	107	80	120	0	0		
Pentachlorophenol	1570	333	1667	0	94.2	80	120	0	0		
Phenol	1720	133	1667	0	103	80	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
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S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	11/8/2004	Run ID:	GC-M_041110C		
Client ID:	ZZZZZ	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/10/2004	SeqNo:	291760		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		ND		15.0									
Lube Oil		ND		50.0									
Surr:o-Terphenyl		31.4		1.00	33.33	0	94.2	50	150	0	0		

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	11/8/2004	Run ID:	GC-M_041111C		
Client ID:	ZZZZZ	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/11/2004	SeqNo:	292174		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		ND		15.0									
Lube Oil		ND		50.0									
Surr:o-Terphenyl		35.17		1.00	33.33	0	106	50	150	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:	11/8/2004	Run ID:	GC-M_041110C		
Client ID:	ZZZZZ	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/10/2004	SeqNo:	291761		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		166.7		15.0	167.6	0	99.4	76.3	122	0	0		
Lube Oil		190.8		50.0	167.6	0	114	69.9	127	0	0		

Sample ID	0411030-04ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	11/8/2004	Run ID:	GC-M_041111C		
Client ID:	ZZZZZ	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/11/2004	SeqNo:	292182		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		ND		17.3	0	0	0	0	0	0	0	20	
Lube Oil		ND		57.8	0	0	0	0	0	118.6	0	20	

Sample ID	0411033-02ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	11/8/2004	Run ID:	GC-M_041111C		
Client ID:	LW040S(21-21.5)	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/11/2004	SeqNo:	292183		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHDX_S

Sample ID	0411033-02ADUP	SampType:	DUP	TestCode:	NWTPHDX_S	Units:	mg/Kg-dry	Prep Date:	11/8/2004	Run ID:	GC-M_041111C		
Client ID:	LW040S(21-21.5)	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/11/2004	SeqNo:	292183		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		ND		17.4	0	0	0	0	0	0	0	20	
Lube Oil		ND		57.9	0	0	0	0	0	0	0	20	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041110C		
Client ID:	ZZZZZ	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/10/2004	SeqNo:	291762		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		343.6		15.0	334	0	103	85	115	0	0		
Lube Oil		352.2		50.0	333.3	0	106	85	115	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041110C		
Client ID:	ZZZZZ	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/10/2004	SeqNo:	291777		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		346		15.0	334	0	104	85	115	0	0		
Lube Oil		341.2		50.0	333.3	0	102	85	115	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041111C		
Client ID:	ZZZZZ	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/11/2004	SeqNo:	292175		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		346		15.0	334	0	104	85	115	0	0		
Lube Oil		341.2		50.0	333.3	0	102	85	115	0	0		

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHDX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-M_041111C		
Client ID:	ZZZZZ	Batch ID:	12222	TestNo:	NWTPH-Dx			Analysis Date:	11/11/2004	SeqNo:	292184		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Diesel		345		15.0	334	0	103	85	115	0	0		
Lube Oil		342.1		50.0	333.3	0	103	85	115	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX_S

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:	11/4/2004	Run ID:	GC-H_041104A		
Client ID:	ZZZZZ	Batch ID:	12195	TestNo:	NWTPH-Gx			Analysis Date:	11/4/2004	SeqNo:	290025		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		ND		2.50									
Surr:4-Bromofluorobenzene		95.04		1.00	100	0	95	50	150	0	0		

Sample ID	MBLK	SampType:	MBLK	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:	11/4/2004	Run ID:	GC-I_041105A		
Client ID:	ZZZZZ	Batch ID:	12195	TestNo:	NWTPH-Gx			Analysis Date:	11/5/2004	SeqNo:	290553		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		3.36		2.50									
Surr:4-Bromofluorobenzene		109.1		1.00	100	0	109	50	150	0	0		

Sample ID	LCS	SampType:	LCS	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:	11/4/2004	Run ID:	GC-H_041104A		
Client ID:	ZZZZZ	Batch ID:	12195	TestNo:	NWTPH-Gx			Analysis Date:	11/4/2004	SeqNo:	290026		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		34.99		2.50	30	0	117	53.5	121	0	0		

Sample ID	0411028-01ADUP	SampType:	DUP	TestCode:	NWTPHGX_S	Units:	mg/Kg-dry	Prep Date:	11/4/2004	Run ID:	GC-H_041104A		
Client ID:	ZZZZZ	Batch ID:	12195	TestNo:	NWTPH-Gx			Analysis Date:	11/4/2004	SeqNo:	290034		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		ND		3.10	0	0	0	0	0	0	0	20	

Sample ID	0411033-07ADUP	SampType:	DUP	TestCode:	NWTPHGX_S	Units:	mg/Kg-dry	Prep Date:	11/4/2004	Run ID:	GC-I_041105A		
Client ID:	LW039D (5-6)	Batch ID:	12195	TestNo:	NWTPH-Gx			Analysis Date:	11/5/2004	SeqNo:	290563		
Analyte		Result		PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		ND		3.36	0	0	0	0	0	0	0	20	

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

CLIENT: Time Oil Co.
WorkOrder: 0411033
Project: NW Terminal Additional Well Install Phase III

ANALYTICAL QC SUMMARY REPORT

TestCode: NWTPHGX_S

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-H_041104A			
Client ID:	ZZZZZ	Batch ID:	12195	TestNo:	NWTPH-Gx			Analysis Date:	11/4/2004	SeqNo:	290027			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		3278		2.50	3000	0		109	80	120	0		0	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-H_041104A			
Client ID:	ZZZZZ	Batch ID:	12195	TestNo:	NWTPH-Gx			Analysis Date:	11/4/2004	SeqNo:	290035			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2838		2.50	2500	0		114	80	120	0		0	

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-I_041105A			
Client ID:	ZZZZZ	Batch ID:	12195	TestNo:	NWTPH-Gx			Analysis Date:	11/5/2004	SeqNo:	290555			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2474		2.50	2500	0		99	80	120	0		0	B

Sample ID	CCV	SampType:	CCV	TestCode:	NWTPHGX_S	Units:	mg/Kg	Prep Date:		Run ID:	GC-I_041105A			
Client ID:	ZZZZZ	Batch ID:	12195	TestNo:	NWTPH-Gx			Analysis Date:	11/5/2004	SeqNo:	290564			
Analyte		Result		PQL	SPK value	SPK Ref Val		%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Gasoline		2385		2.50	2500	0		95.4	80	120	0		0	B

Qualifiers: ND - Not Detected at the Reporting Limit
J - Analyte detected below quantitation limits

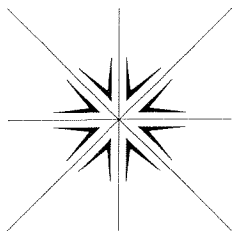
S - Spike Recovery outside accepted recovery limits
R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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KEY TO FLAGS

- A This sample contains a Gasoline Range Organic not identified as a specific hydrocarbon product. The result was quantified against gasoline calibration standards
- A1 This sample contains a Diesel Range Organic not identified as a specific hydrocarbon product. The result was quantified against diesel calibration standards.
- A2 This sample contains a Lube Oil Range Organic not identified as a specific hydrocarbon product. The result was quantified against a lube oil calibration standard.
- A3 The result was determined to be Non-Detect based on hydrocarbon pattern recognition. The product was carry-over from another hydrocarbon type.
- B The blank exhibited a positive result great than the reporting limit for this compound.
- CN See Case Narrative.
- CR Result for this analyte maybe biased due to interferences.
- D Result is based from a dilution.
- E Result exceeds the calibration range for this compound. The result should be considered as estimate.
- F The positive result for this hydrocarbon is due to single component contamination. The product does not match any hydrocarbon in the fuels library.
- G Result may be biased high due to biogenic interferences. Clean up is recommended.
- H Sample was analyzed outside recommended hold time.
- J The result for this analyte is between the MFL and the PQL and should be considered as estimated concentration.
- K Diesel result is biased high due to amount of Oil contained in the sample.
- L Diesel result is biased high due to amount of Gasoline contained in the sample.
- M Oil result is biased high due to amount of Diesel contained in the sample.
- MC Sample concentration is greater than 4x the spiked value, the spiked value is considered insignificant.
- MI Result is outside control limits due to matrix interference.
- MSA Value determined by Method of Standard Addition.
- O Laboratory Control Standard (LCS) exceeded laboratory control limits, but meets CCV criteria. Data meets EPA requirements.
- P Detection levels of Methylene Chloride may be laboratory contamination, due to previous analysis or background levels.
- Q Detection levels elevated due to sample matrix.
- R RPD control limits were exceeded.
- RF Duplicate failed due to result being at or near the method-reporting limit.
- S Recovery is outside control limits.
- SC Closing CCV exceeded high recovery control limits, but associated samples are non-detect. Data meets EPA requirements.
- * The result for this parameter was greater that the maximum contaminant level of the TCLP regulatory limit.



Specialty Analytical

19761 S.W. 95th Place
Tualatin, OR 97062
(503) 612-9007
Fax (503) 612-8572
1 (877) 612-9007

December 01, 2004

DEC - 9 2004

Mark Chandler
Time Oil Co.
2737 West Commodore Way
Seattle, WA 98199-1257

TEL: (206) 285-2400

FAX (206) 285-7833

RE: NW Terminal/Well Replacement-231001

Dear Mark Chandler:

Order No.: 0411117

Specialty Analytical received 1 sample on 11/19/2004 for the analyses presented in the following report.

There were no problems with the analysis and all data for associated QC met EPA or laboratory specifications except where noted in the Case Narrative, or as qualified with flags. Results apply only to the samples analyzed. Without approval of the laboratory, the reproduction of this report is only permitted in its entirety.

If you have any questions regarding these tests, please feel free to call.

Sincerely,

Ned Engleson
Project Manager

Technical Review

CC:
Terry McGoorty @ Landau Associates



0411.117

Date 11/19/07
Page 1 of 1

Chain-of-Custody Record

Project Name <u>IMEDIL</u>		Project No. <u>231001</u>		Testing Parameters										
Project Location/Event <u>POSTERMINAL / Well Replacement</u>				<div>Turnaround Time <input checked="" type="checkbox"/> Standard <input type="checkbox"/> Accelerated <input type="checkbox"/></div>										
Sampler's Name <u>CHRISTY JOHNSON</u>														
Project Contact <u>CHRISTY JOHNSON</u>														
Send Results To <u>See Comment</u>														
Sample I.D.	Date	Time	Matrix	No. of Containers	Observations/Comments									
<u>LW004R(14.5-15)</u>	<u>11/19/04</u>	<u>1045</u>	<u>SOIL</u>	<u>2</u>	<div><u>1 REP 8070</u></div> <div><u>-PLEASE PDF RESULTS TO REBEKAH BROOKS</u> <u>CHRISTY JOHNSON</u> <u>HARD COPY TO MARK CHADLER</u> <u>TERRY MCQUINN</u> <u>ADD TO FILE</u> <u>WALVERSON</u></div>									
Special Shipment/Handling or Storage Requirements					Method of Shipment <u>HAND DELIVERED</u>									
Relinquished by <u>[Signature]</u> Signature <u>CHRISTY JOHNSON</u> Printed Name <u>LANDAU ASB</u> Company <u>11/19/04</u> <u>1335</u> Date Time		Received by <u>[Signature]</u> Signature <u>Cindy Hilgard</u> Printed Name <u>Specialty</u> Company <u>11/19/04</u> <u>1335</u> Date Time		Relinquished by Signature Printed Name Company Date Time		Received by Signature Printed Name Company Date Time								

WHITE COPY - Project File

YELLOW COPY - Laboratory

PINK COPY - Client Representative

Rev. 6/02

BZTO104(e)023771

Specialty Analytical

14-Dec-04

Lab Order: 0411117
Client: Time Oil Co.
Project: NW Terminal/Well Replacement-

DATES REPORT

Sample ID	Client Sample ID	Collection Date	Matrix	Test Name	TCLP Date	Prep Date	Analysis Date
0411117-01A	LW004DR (14.5-15)	11/18/2004 10:45:00 AM	Soil	Semi-Volatile Compounds- Acid Fraction		11/23/2004	11/29/2004

BZTO104(e)023772

Specialty Analytical

Date: 01-Dec-04

CLIENT:	Time Oil Co.	Lab Order:	0411117
Project:	NW Terminal/Well Replacement-231001		

Lab ID:	0411117-01	Collection Date:	11/18/2004 10:45:00 AM
Client Sample ID:	LW004DR (14.5-15)	Matrix:	SOIL

Analyses	Result	Limit	Qual	Units	DF	Date Analyzed
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SEMI-VOLATILE COMPOUNDS- ACID FRACTION		E8270B-AF				Analyst: bda
Pentachlorophenol	ND	333		µg/Kg	1	11/29/2004 12:02:00 PM
Surr: 2,4,6-Tribromophenol	73.7	57.8-119		%REC	1	11/29/2004 12:02:00 PM

Specialty Analytical

Date: 01-Dec-04

CLIENT: Time Oil Co.
Work Order: 0411117
Project: NWTerminal/WellReplacement-231001

ANALYTICAL QC SUMMARY REPORT**TestCode: 8270AF_S**

Sample ID	MB-12326	SampType:	MBLK	TestCode:	8270AF_S	Units:	µg/Kg	Prep Date:	11/23/2004	Run ID:	5973G_041129A	
Client ID:	ZZZZZ	Batch ID:	12326	TestNo:	E8270B-AF			Analysis Date:	11/29/2004	SeqNo:	295083	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol		ND	333									
Surr:2,4,6-Tribromophenol		2250	0	3333	0	67.5	57.8	119	0	0		

Sample ID	LCS-12326	SampType:	LCS	TestCode:	8270AF_S	Units:	µg/Kg	Prep Date:	11/23/2004	Run ID:	5973G_041129A	
Client ID:	ZZZZZ	Batch ID:	12326	TestNo:	E8270B-AF			Analysis Date:	11/29/2004	SeqNo:	295084	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol		942.3	333	1667	0	56.5	46.8	120	0	0		

Sample ID	0411117-01AMS	SampType:	MS	TestCode:	8270AF_S	Units:	µg/Kg	Prep Date:	11/23/2004	Run ID:	5973G_041129A	
Client ID:	LW004DR(14.5-15)	Batch ID:	12326	TestNo:	E8270B-AF			Analysis Date:	11/29/2004	SeqNo:	295086	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol		929	333	1667	48.33	52.8	36.6	112	0	0		

Sample ID	0411117-01AMSD	SampType:	MSD	TestCode:	8270AF_S	Units:	µg/Kg	Prep Date:	11/23/2004	Run ID:	5973G_041129A	
Client ID:	LW004DR(14.5-15)	Batch ID:	12326	TestNo:	E8270B-AF			Analysis Date:	11/29/2004	SeqNo:	295087	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol		947.3	333	1667	48.33	53.9	36.6	112	929	1.95	20	

Sample ID	CCV-12326	SampType:	CCV	TestCode:	8270AF_S	Units:	µg/Kg	Prep Date:		Run ID:	5973G_041129A	
Client ID:	ZZZZZ	Batch ID:	12326	TestNo:	E8270B-AF			Analysis Date:	11/29/2004	SeqNo:	295082	
Analyte		Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Pentachlorophenol		1427	333	1667	0	85.6	80	120	0	0		

Qualifiers: ND - Not Detected at the Reporting Limit
 J - Analyte detected below quantitation limits

S - Spike Recovery outside accepted recovery limits
 R - RPD outside accepted recovery limits

B - Analyte detected in the associated Method Blank

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BZTO104(e)023774

Electronic Cumulative Detected Groundwater Data